

S 121





CORYTHORNIS COERULEDCEPHALA, ♂ & juv.

THE
Quarterly Magazine

OF THE

High Wycombe Natural History Society. K

VOL. I.

(H. 1-194)

"HE PRAYETH WELL WHO LOVETH WELL
BOTH MAN, AND BIRD, AND BEAST;
HE PRAYETH BEST WHO LOVETH BEST
ALL THINGS BOTH GREAT AND SMALL;
FOR THE DEAR GOD WHO LOVETH US,
HE MADE AND LOVETH ALL,"

Wycombe :

PRINTED FOR THE SOCIETY BY W. BUTLER, CHURCH SQUARE :
AND SOLD BY ALL BOOKSELLERS.



Index.

ORIGINAL ARTICLES.

	PAGE.
* Additions to the Wycombe Flora, 1866-7...	65, 153
Amongst the Grass (<i>illustrated</i>)	61
Autumn	27
Birds, The, of Cookham and the Neighbourhood ...	123, 147, 173
Branched Clavarias (<i>illustrated</i>)	81
Chiltern Country, The... ..	18, 36, 85, 131
Clerks of the Weather	106
Folk-Lore	165
Instinct v. Reason	109, 129
Introductory Address	3
Large Wood Wasp, The (<i>illustrated</i>)	41
Migration	32
Mosses	40
Notes on Buckinghamshire Plants	171
November Ramble, A	51
On Fascination	88
* On Incredulity with respect to Geological Facts	54
* On the Destruction of Birds	99, 134
* On the Seeds, or Spores, of Fungi (<i>illustrated</i>)... ..	179
* On the Study of Natural History	5
Ornithological Notes	162
* Our Ferns	156
* Our Migrants	184
* Pleasures, The, of Moth Hunting... ..	78
Resources	75
Snake, The, and Adder	29
Useful Books	70
Weather, The, in the British Isles	33
What we found	21
Winter Life, The, of a Cuckoo in England	189
Wycombe Birds	68
Wycombe Butterflies :—	
i. Our Vanessidæ	43
ii. Our Argynnidæ	111
iii. The Red Horns	163
Wycombe Hawkmoths	45
Wycombe Wild Flowers:—	
i. The Nightshade Family	11
ii. Our Violets (<i>illustrated</i>)	90
* The Papers marked thus have been read before the Society.	
Proceedings of the Society	23, 46, 69, 94, 113, 137, 168, 191
* Second Annual Address of the President	115
* Second Annual Report of the Secretary... ..	139
Notices of Books	143

NOTES AND CORRESPONDENCE.

	PAGE		PAGE
American Blight, The	35	Is Geology a dry Study?	26
Angle Shades Moth, The	74	Land Efts	25
Beech Leaves	48	Large Tortoise-shell, The.. ..	72
Birds, The, of Berks and Bucks	169	Late Martins	170
Burnham Beeches	194	Martins	26
Butcher's Broom, The	190	Mezereon, The	194
Caterpillars	26	Moles	49
Chantarelle, The	50	Morell (<i>illustrated</i>)	194
Clerks of the Weather	145	On Preserving the Colour of Dried	
Clouded Yellow, The	146	Flowers	145
Curious Place for a Bird's Nest	73	Phosphoric Centipede, A	146
Dr. Johnson at Fault	26	Plant new to the District	25
Duke of Burgundy, The	145	Reason in Animals	133
Edible Fungi	73	Scarcity of Common Lepidop-	
Flora of Bucks, The	169	tera	170, 193
Funeral of a Bee	49	Sea Currents	17
Future Life of Animals, The ..	74	Small Elephant Hawkmoth, The	74
Good Old Times, The	122	Stoat, The	170
Green Woodpecker, The	73	Uses of Animals	47
Hawkmoths	50	Water Crowfoot	194
Hebenon	48, 72, 98, 121	Wheatear, The	146, 169
Hedgehogs	98, 169	Whiteflowered Wood Violet	25
Humming Bird Moth, The	49	White Sand Martin	146
Instinct v. Reason 25, 26, 48, 49, 74			

QUARTERLY MAGAZINE
OF THE
High Wycombe
NATURAL HISTORY SOCIETY.

JULY, 1866.

ADDRESS.

ACCORDING to the expressed wishes of many lovers of Nature, the above Society has resolved on issuing a periodical. As in the case of old John Bunyan's book, there will doubtless be many varied opinions concerning its venturing to do so. But if any apology be needed, we can only state that our simple desire is to spread abroad a knowledge of the things which lie around us, and to increase that love for such things which dwells naturally in the human breast. The district around High Wycombe is one peculiarly rich in natural treasures, both botanical and zoological, and at the same time is one which has been but very cursorily examined. There are flowering plants to be found in our woods, of sufficient rarity to induce botanists to make a journey from London to see them in bloom; there are many animals in the vicinity which inhabit but a few favoured spots in the island: the geology, if not of very varied aspect, is still highly interesting, many curious fossils having been obtained here, while the scenery in the valley is especially tranquil and soothing. To the numerous objects in these different branches of study we desire to draw attention, and also to spread any information in our power concerning them. In each number we hope to give two or three original articles on our local Fauna and Flora, to notice the progress of the study of Natural History generally, and by means of a page

or two for Notes and Queries, to afford an opportunity to all who desire it, of asking for, and receiving information. All notices of the appearances of migratory birds, and hibernating animals, of the occurrence of rare and uncommon plants, will be thankfully received and inserted; we hope to make the work a reliable natural history of the neighbourhood, and to this end we ask all and everybody to contribute their quota, remembering that nothing is too trivial to notice, there is no telling what missing link in the chain it may prove to be: all that is necessary is a plain, truthful manner of telling it, omitting all romance, and never allowing imagination to supply the place of fact. For the science is peculiarly an inductive one; conclusions must not be drawn from one or two observations; if they are, we shall in all probability have to cancel them; patience and personal observation, however, will prevent this.

Should the Magazine meet with a favourable reception, we hope to issue it oftener than its present title would imply, and also to increase its size: for the present we must leave it to stand or fall on its own merits.

On the Study of Natural History.

A PAPER READ AT THE ANNUAL CONVERSAZIONE OF THE
SOCIETY IN APRIL LAST, BY THE SECRETARY.

“God fulfils Himself in many ways.”

THE study of Natural History may be looked at from two points of view; we may regard it either as affording pleasure to the senses and gratification to the mind; or as tending to be practically useful in the economy of our lives. It is now closely followed up by the holders of each of these views, and none of either class have ever repented the study. Nature herself is so infinite and varied in all her productions, that though she has had disciples ever since man appeared on the earth, she retains, even now, after the lapse of thousands of years, the same freshening influence, the same charm hanging about her works, which acts with such an irresistible force upon the neophyte, and urges him to travel onwards. It is not my intention now to refer at all to the advantages derived from the study by those holding the second view; we are assembled here as we have been at other times, simply from a love of Nature, with a desire so to look upon created works, that we may find “life and food for future years.” To many I may say nothing new; to some I may probably be able to place some old facts or thoughts in a new light; but I shall be amply repaid if I succeed in making only one more eager in his or her pursuits in the woods and fields—more desirous of following out thoroughly that which at present is taken up only in a desultory manner.

I believe the love of created works to be inherent in the human mind—that it is not so much an acquired love as one that will spring up involuntarily; we have it in us naturally; it may lie a long time dormant, but when some flower of spring, or animated “thing of beauty” shall appear, at a moment perhaps when the heart is peculiarly open to its influence, it will implant itself in our memories, and become a “joy for ever.” Few indeed are they, who, having once set foot within the porches of the great palace of nature turn round and retrace their steps. And the farther they advance the greater is their wonder and delight—the more keen is their sense of enjoyment. When LINNÆUS, after years of study, came to England, and for the first time in his life saw the yellow gorse in flower, he fell on his knees, and thanked God for the sight. No one can understand this who has not discovered a rare plant or seen some beautiful animal for the first time, that he has long wished to find.

Just as in childhood, as the years—nay, as the weeks—roll by, we make fresh discoveries in the world around us, feel ourselves growing wiser—feel an expansive power at work within us, produced by the very objects which that power enables us to appreciate—so do we, in maturer years, among the domains of nature, feel sources of new pleasures ever opening to us, and we make continually new discoveries. The things which delighted us in childhood, yield us little delight in manhood—*then*

“Earth, and every common sight,
To us did seem
Apparell’d in celestial light,
The glory and the freshness of a dream.”

But a sort of wearisome familiarity began to cling to them,

“Shades of the prison-house begin to close
Upon the growing *boy*,
But he beholds the light, and whence it flows,
He sees it in his joy;
The *youth* who daily from the East
Must travel, still is nature’s priest,
And by the vision splendid
Is on his way attended;
At length the *man* perceives it die away,
And fade into the light of common day.”

So, says the poet, is it with the ordinary experiences of life. If it could be shown then, that there was any one subject of study, which, beyond all others, and with less trouble, could afford us a

never-ending experience of *new* pleasures—pleasures, which should not pall our satiated appetites, which have the very least alloy of disappointment in them, is it not worth while to pay a little attention to it? I may be said to be exaggerating, to be enthusiastic in my own mode of recreation; but I appeal to all naturalists to bear me out in what I have said, and I confidently leave it to the experience of others.

The subject is one, not so much for the library and the study, as for the theatre of Creation itself—you will bear in mind the view with which I am now regarding it—we shall learn most by personal examination, and what we so learn we shall seldom forget.

Nature probably is most fascinating, subjectively, in the season of youth, the mind being then most capable of pure enjoyment, for its own sake; all things then wear a fairy garb; it was then, says Wordsworth, that

“The sounding cataract
Haunted me like a passion: the tall rock,
The mountain, and the deep and gloomy wood,
Their colours and their forms, were then to me
An appetite; a feeling and a love
That had no need of a remoter charm
By thought supplied, or any interest
Unborrowed from the eye.”

And as riper years steal upon us the same love retains its hold, but there is a change in the mode of regarding it; we, like the poet, learn

“To look on Nature, not as in the hour
Of thoughtless youth, but hearing oftentimes
The still, sad music of humanity,
Not harsh nor grating, though of ample power
To chasten and subdue. And we have felt
A presence that disturbs us with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the mind of man:
A motion and a spirit that impels
All thinking things, all objects of all thought,
And rolls through all things.”

To come to something practical: let us draw a comparison between a lover of nature and one who thinks nothing of her. Take the case of a simple ramble through the fields: most people are in the habit of “doing a constitutional” occasionally. This

walk is very often quite aimless, and is only undertaken as a matter of duty, out of regard to one's health. A man takes a certain number of steps every day; he feels a sort of satisfaction after it, and goes to his work again until the time returns for its repetition. All well and good perhaps, but I ask, is it not also our duty to keep our minds in health, as well as our bodies? The above individual grows no richer, mentally, for his labour. How different from the case of another, who tells you he never comes home from a ramble without having discovered something fresh: he goes out to escape from his daily routine of business; he knows that nothing rests the mind so much as *change*, and that when it is thoroughly wearied out by continued concentration on one subject, it is better to occupy it with another than to suffer it to be idle. And therefore in his walk he notices the flower and the animal, their habitats, and their times of appearing; he discovers, without the aid of books, that there is "a time for everything"—a set time, and that in the beautiful regularity which pervades nature, nothing appears out of time or order; the caterpillar is not hatched before its food-plant is putting forth its leaves; the butterfly and the bat do not wake from their winter's sleep when there is nothing for them to eat; everything is arranged. He notices, with scarcely an effort, the peculiarities of the beasts of the field, and the birds of the air; he discovers the marvellous connection between one species and another, between one family and another, and the dependence of all upon the Creator, so that

"The whole round earth is every way
Bound by gold chains about the feet of God."

In the Spring *his* eyes first see the swallow, *his* ears are first greeted by the cuckoo, he is gratified by the bursting forth of the vegetation into the most lovely green; in the Autumn, while tints still more lovely objectively, array themselves before him, his delight is tempered with sober thoughts of the great change which is one day to be wrought in himself. In Summer he beholds the triumphant reign of all living things, and in Winter—generally thought to be dull and cheerless in the country,—he knows where to find the squirrel and the dormouse snugly domiciled; he can find you the chrysalis of many a moth and butterfly marvellously

entombed in the earth, or slung in a hammock; he can show you luxuriant beds of mosses—those children of the winter that flourish when all around is asleep. And even if he could not *show* you all this, think what marvellous stores of information he has laid up, that shall afford him food for thought when he is lonely, or from which he can draw fairy lore to wile away the winter evening; what tales he can tell you of the wonderful things he saw in the summer—how he found the boat of eggs floating about in the pond, so curiously and perfectly formed by the gnat, that it could not be upset—a veritable life-boat; again, how he drew from the water a thing monstrously strange, armed with jaws that could unfold themselves upon its prey while yet afar off, how with unrelenting steadfastness it destroyed and devoured the other inhabitants, and after a few months of such enjoyment it climbed up a tall reed, and splitting itself down the back, took unto itself wings and flew off to continue its carnage among the inhabitants of air. Or our naturalist may give you more pleasing accounts of the nests of the wren and titmouse, the beautiful spotted eggs of the thrush, and the pearly eggs of the azure halcyon—how one bird assailed him with a torrent of abuse as he approached her offspring, and another suffered him to lay hold of her, sooner than she would forsake her nest: again, of the banks of flowers upon which he lay and pondered—the bed of happy violets, the golden cowslips, the “jocund company” of daffodils, the delicate wood sorrel, the wind flower; he tells you how he saw the face of wintry nature turned into a perfect paradise of loveliness, and says

“Though absent long
These forms of beauty have not been to me
As is a landscape to a blind man’s eye;
But oft, in lonely rooms, and ’mid the din
Of towns and cities, I have owed to them,
In hours of weariness, sensations sweet.”

These are the stores upon which the lover of nature can draw.

The poets of nature have been many, and I must not take up your time in quoting what is most likely familiar to you. I have tried to show what a charm there is around us if we like to experience it—what an infinite variety there is for the mind to study. It is this infinite variety which gives the superiority to Natural History as a means of recreation: there is no fear of exhausting

the subject. Alexander the Great was sorely distressed when he had conquered all there was to conquer; but it cannot be so with us, Creation knows no limit. I remember reading in some "wild dream of a German poet" that a human being was conducted over the universe to view God's worlds, and that after sweeping past innumerable orbs,—planets, satellites, and comets, the mind of the man sank into itself, and shuddered with the overpowering effects, begging to be shown no more. If it were so with the thought of the infinity of *worlds*, what would it be, could he have but a dim comprehension of the infinitude of infinities that exists in each separate world.

Here then is provided for our delectation a goodly storehouse of knowledge; volumes upon volumes lie open before us; take them up and reverently turn over the leaves, they make up the Book of GOD.

Nor only is the past history of each being written in every particle of which its material frame is constructed, but the past records of the universe to which it belongs, and a prediction of its future. God can make no one thing that is not universal in its teachings if we would be so taught; if not, the fault is with the pupils, not with the Teacher. He writes His everliving words in all the works of His hand; He spreads this ample book before us always ready to teach if we will only learn. We walk in the midst of miracles with closed eyes and stopped ears, dazzled and bewildered with the Light, fearful and distrustful of the Word! It is not enough to accumulate facts as misers gather coins, and then to put them away on our bookshelves, guarded by the bars and bolts of technical phraseology. As coins, the facts must be circulated, and given to the public for their use. It is no matter of wonder that the generality of readers recoil from works on the natural sciences, and look upon them as mere collections of tedious names, irksome to read, unmanageable of utterance, and impossible to remember. Our scientific libraries are filled with facts, dead, hard, dry, and material as the fossil bones that fill the sealed and caverned libraries of the past. But true science will breathe life into that dead mass, and fill the study of Zoology with poetry and spirit.—REV. J. G. WOOD.

Wycombe Wild Flowers.

I.—THE NIGHTSHADE FAMILY (*Solanaceæ*).

“IT came to passe that three boyes of Wisbich in the Ile of Ely did eate of the pleasant and beautiful fruit hereof, two whereof died in lesse than eight houres after that they had eaten of them. The third child had a quantitie of hony and water mixed together given him to drinke, causing him to vomit often: God blessed this meanes and the child recovered.”

The “Three Boyes of Wisbich”—especially the Two who died—seem to us worthy of exaltation to the very highest pinnacle of the Temple of Shocking Examples erected by the nurses of Great Britain for the benefit and warning of those under their care. Children, we are all aware, have in them from birth almost, a predilection for testing the quality of every object which they see around them, by selecting a small portion thereof for immediate consumption. Shem, Ham, and Japhet, with their wives and cattle (we allude to their representatives in the “Noah’s Arks” of infancy), are all very well while what we may term the sucking stage of childhood lasts: but when the gnawing epoch succeeds, accompanied by the acquirement of the rudiments of walking, a wider sphere opens before the young and inquiring mind; out-door objects—earwigs and ants, for example—are devoured with relish, and herbs of various properties serve as sauce. A nursemaid in herself is powerless to prevent this: but arm her for the occasion with the tragical tale of the Three, and the horrible fate of the Two “Boyes of Wisbich;” let her be taught to narrate it in simple, but forcible language; and the infantile imagination *must* shudder at the scene presented to it, and the varied diet *may be* desisted from.

Does this seem a strange way of beginning a paper upon Wycombe Wild Flowers? Let us then, without further delay, proceed to our subject, to which the above is not wholly

irrelevant, leaving, for the present, conjectures (in which we confess we feel great interest) as to why the "meanes" which were blessed to the recovery of the third child, were not at least tried upon the other two.

Our readers' curiosity must be—or at any rate *ought* to be—by this time excited as to the name of the plant, the "pleasant and beautiful fruit" of which brought such fatal consequences to the youthful Wisbichians. Quaint old Gerarde, who is our authority for the above statement, tells us that it was Dwale, or DEADLY NIGHTSHADE, and advises his readers to banish it from their gardens, or from any place near their houses, "being a plant so furious and deadly." It belongs to the order SOLANACEÆ—the Nightshade Family, to the few British representatives of which—all of them wild flowers of the Wycombe district—we would now direct attention.

The Deadly Nightshade rejoices in the Latin name of *Atropa Belladonna*, but is perhaps usually known by that of *Belladonna* only, which we should anglicise as "Beautiful Lady;" given to it from the fact that it is used as a cosmetic by Italian dames. The name *Atropa* refers very strongly to the fatal properties of the plant, Atropos being the mystic Fate whose office it was to sever the thread of life. Its English names also point to the poisonous nature of this species: they are—Deadly, or Sleepy, Nightshade; Dwale—a word which is a corruption of the French word *deuil*, mourning—to which is frequently added the prefix Deadly; Hogsbean—a name which is also applied to the Henbane;—and Dwayberries.

The Deadly Nightshade is a very large and handsome plant, from three to eight feet high, and very shrubby; the stems are often thicker than an ordinary walking-stick; the leaves are large and smooth, of a somewhat dark green, egg-shaped, pointed, and uncut. The flowers are also somewhat handsome, the calyces being green, and the corollas lurid purple; the latter are very numerous, growing singly, or occasionally in pairs, upon rather long stalks; and are pendulous, bell-shaped, and *monopetalous*, *i.e.*, one-petalled, all in one piece; each containing five white stamens, and one pistil. But it is in fruit that our *Bella-*

donna appears most to advantage, when each blossom is succeeded by a lustrous purplish-black berry as large as a cherry, the juice of which gives a brilliant and permanent purple dye to paper; and the slender boughs bend to the earth with their beautiful but deadly freight. Each berry contains a great number of small black seeds, and is seated on the five-pointed calyx, which remains after the corolla has fallen off. We may here remark that the *corolla* is that part of the blossom which is *usually* coloured, and which is commonly called the *flower*; the *calyx* is the cup in which the corolla is placed, and is *usually* green. In some plants, as in the Buttercup, the calyx falls off as the corolla expands: but in others, as in our Deadly Nightshade, it is *persistent*, remaining even when the fruit is matured.

Many suppose that it is to the *Belladonna* that Shakespeare alludes, when he says,

“Have we eaten of the insane root
That takes the reason prisoner?”

and this supposition is borne out by the old authors, who tell us that “this kind of Nightshade *troubleth the minde, bringeth madness* if a few of the berries be inwardly taken, but if moe be given they also kill and bring present death.” Nevertheless, when judiciously employed, *Belladonna* is a valuable remedy in many diseases, especially in such as affect the eye.

The Deadly Nightshade is a rare plant of chalky districts, and is also found among ruins: in some places it is very abundant, as about the ruins of Furness Abbey, whence that neighbourhood is said by Withering to have obtained the name of “Vale of Nightshade.” Our own district produces it in several localities: it grows in profusion among the undergrowth in the little wooded patch which faces the middle lodge in Wycombe Park, and was formerly found on Keep Hill, as well as in a small wood above Hedge Mill, near Loudwater. A fine specimen grows in the Hughenden woods; and in the woodlands near Marlow and Medmenham it is of frequent occurrence, being especially luxuriant in some parts of Bisham Wood, Berks. The blossoms expand in June and July, and the berries are in perfection during September and October.

The HENBANE, or Hogsbean (*Hyoscyamus niger*), shares the poisonous properties of the Deadly Nightshade in a very marked manner: its English name would point to its ill effects upon birds, and nearly all living beings are susceptible of its influence. Shakespeare speaks of the "juice of cursed Hebenon," (not unfrequently rendered "Ebony!")

"Whose effect
Holds such an enmity with blood of man
That, swift as quicksilver, it courses through
The natural gates and alleys of the body;
And, with a sudden vigour, it doth posset
And curd, like eager droppings into milk,
The thin and wholesome blood."

And Gerarde tells us that "the leaves, seed, and juyce taken inwardly, cause an unquiet sleepe like unto the sleep of drunkenesse, which continueth long, and is deadly to the party." Like the Deadly Nightshade, however, Henbane is a valuable plant in medicine, when used with judgment and care. The following anecdote, for the accuracy of minute particulars of which we cannot vouch, but the main facts of which are to be found in various works, show the striking effects produced by Henbane when taken unintentionally in large quantities.

The Abbot of Jenesaisquoi had presented to his brother of Rhinon a salad, which was all that a salad should be—hot and strong, and plenty of it; little wotting, good man! that the lay-brother to whom the gathering of the herbs was entrusted had, with a lamentable ignorance of Botany, substituted the root of the Henbane for that of the bitter, but innoxious Chicory. At collation, full justice was done to the salad: its flavour was *piquant* and savoury withal. The monks went to bed, and slept heavily: when Brother Ambrose rang the bell for Prime, they thought that the time for that office had come round apace. But worse took place when they had somehow or other assembled themselves in chapel: the prior and chanters vied with each other in singing ridiculous nonsense: Brother Cyprian was with difficulty restrained from violently assaulting Brother Patrick, while the characters in Brother Gregory's book took unto themselves the form of flies, and kept the worthy soul fully employed in attempting to brush them off. Brother Maurus was absent

altogether, and was found fast asleep in a corner of his cell, emitting such groans the while, that extreme unction would have been administered forthwith, had any brother been steady enough to perform the service. But the worst case of all was that of poor Lay-brother Francis, the tailor in ordinary to the monastery, who saw *three* needles when he should have seen but *one*, and occupied his time for more than a week in endeavouring to thread the two imaginary ones; during which time we can readily conceive that the robes of the Brotherhood got somewhat out of repair. However, we are told that the holy men all recovered, each, doubtless, resolving to be cautious ere he tasted a salad, the composition of which was unknown to him. And from this tale we may deduce a moral—Don't eat of made dishes unless you know what's in them.

Henbane may be recognised, when seen, by its somewhat large, pale green leaves, which are usually much cut, and being viscid, support a large quantity of dust: the whole plant is extremely clammy and downy, emitting a peculiar and offensive smell. The woody stem, which in fine specimens is much branched, varies in height from one to two feet, but is frequently shorter. The calyces are large, becoming upright after the falling off of the corollas: they are composed of strong fibres, and may usually be noticed in groups of "skeleton flowers." The monopetalous corollas are somewhat bell-shaped: those which first appear seem quite embedded in the topmost leaves, but as the stem elongates, we observe that they are really seated on short stalks in the *axils* of the leaves—*i.e.*, where these join the stem. They are of a pale straw-colour, or brownish yellow, exquisitely veined with lurid purple, which hue also tinges deeply the centre of each. There are five stamens and one pistil; the seeds are black and very numerous, of about the size of a mustard-seed. The Henbane has a great partiality for waste ground, and may usually be seen springing up where a portion of woodland has been cleared: in newly made gardens it is sometimes a troublesome weed. Preferring a chalky soil, it is seldom to be found in the same place for two successive seasons: we know but one permanent locality for it near Wycombe—about the rubbish heaps

on Totteridge Common, where it has held its ground for many years, and grows to a large size. On waste ground and rubbish heaps it has been seen in all parts of the district—Great Marlow, Little Marlow, Bourne End, Cookham (Berks), Wycombe Marsh, Downley, Bradenham, Bledlow Ridge, &c.; and each year it is observed in some fresh locality. Last season, the Henbane was particularly fine and abundant in the large pit at Littleworth, near Downley. The blossoms expand from May till September.

Our two remaining British Nightshades belong to the genus *Solanum*, from which the order takes its name. To mention all the useful and ornamental species of *Solanum* would take up too much space, but before proceeding to the description of the two indigenous ones, we may briefly draw attention to one or two which are especially noticeable. First among these comes the Potato (*S. tuberosum*), one of the discoveries of unfortunate Sir Walter Raleigh; how would he stare, could he behold the manifold varieties of his Peruvian *protégé* now cultivated in this country! The Tomato or Love-apple (*S. lycopersicum*), loved of gourmands, comes from Mexico and other countries; the curious Egg-plant (*S. esculentum*), too, is a member of this genus; and so is the Apple of Sodom (*S. Sodomæum*). Besides these, the number and variety of Nightshades now cultivated in what are termed “sub-tropical gardens,” would baffle the description of any but their cultivators.

Our own British species are the BITTERSWEET, or WOODY (mis-called Deadly) NIGHTSHADE (*S. dulcamara*), and the BLACK, or GARDEN NIGHTSHADE (*S. nigrum*). The former of these needs no description: any one who cares to know what Woody Nightshade blossoms are like, is requested to go to the nearest potato patch, and gather a bunch of potato-flowers, which Woody Nightshade blossoms resemble as closely as anything small *can* resemble anything large. The aforesaid “any one” will have no difficulty in finding *S. dulcamara*; its long branches creep up nearly every hedge, or trail along by rubbish heaps and waste ground. It is most conspicuous in the late autumn and winter, when the flowers are succeeded by clusters of bright scarlet berries, beautiful but dangerous. The Garden Nightshade is much less

common, occurring as a weed in gardens at Wycombe and Great Marlow, and also on waste ground in the latter locality. It is a shrubby plant, usually of small size, with white potato-like blossoms, which are succeeded by black berries, and entire, sometimes toothed leaves, and is altogether insignificant in appearance. In a dried state (hear it! O herbarium makers!) its appearance is miserable in the extreme. It shares the poisonous properties of *S. dulcamara*; and its flowers expand from July to September.

The following useful or interesting plants also belong to the *Solanaceæ*: the Winter Cherry (*Physalis Alkekeng*), a pretty garden plant which seems to have gone out of fashion; *Capsicum annuum*, from which Cayenne pepper is obtained; the Mandrake (*Mandragora officinarum*), which our ancestors fabled as *shrinking* when pulled from the ground; the Thorn-apple (*Datura Stramonium*), with large white trumpet-shaped blossoms, and thorned seed-vessels, occasionally found on rubbish heaps; and the two species of Tobacco-plant (*Nicotiana virginica* and *N. rustica*), the leaves of which, in conjunction with those furnished by the delightful, though humble, Dock, and the Cabbage-fields of the Metropolis supply the sterner sex—and occasionally, it is said, the *weaker* one—with the means of “making chimneys of their mouths.”

In this age of sensation, we fear that our article may have proved somewhat “slow.” We regret, but cannot obviate, the fact. Let us conclude, then, by presenting as a peace-offering to the Genius of Sensationalism, the name of *Solanum anthropophagorum*, which was exhibited at a recent meeting in London, as “the plant eaten with *man-meat* by the Fijis!”

JAMES BRITTEN.

SEA-CURRENTS.—How much solid matter does the whole host of marine plants and animals abstract from sea water daily? Is it a thousand pounds, or a thousand millions of tons? No one can say. But, whatever be its weight, it is so much of the power of gravity applied to the dynamical forces of the ocean. And this power is derived from the salts of the sea, through the agency of sea-shells and marine animals, that of themselves scarcely possess the power of locomotion. Yet they have power to put the whole sea in motion, from the equator to the poles, and from top to bottom.—MAURY.

The Chiltern Country.

WE hear often of the "Chiltern Hills," and the "Chiltern Hundreds," occasionally of the "Chiltern Forest," but little seems to be known of the name, its origin, or meaning. The following sketch is written in the hope of throwing some light on the early history of the tract of country represented by these names, whose hills and dales are so familiar to the members of our society through our numerous pleasant excursions.

The "Chiltern Hills" are usually taken to mean the ridge of lofty hills which separate South Buckinghamshire from the Vale of Aylesbury; but the name of Chiltern properly applies to the whole of the hilly district of which the Chiltern hundreds, of political celebrity, form a portion. This district is called in the most ancient records by the simple name of Ciltern or *Chiltern*, and in later times, the *Chiltern forest*. Physically it may be defined as the tract of table land, broken up by numerous valleys and coombs, and marked by lofty peaks which serve as landmarks for many miles round—which stands up in bold relief between the vales of the Thame and of the Thames. This tract was covered by an almost impassable forest of beech woods, from which it acquired its ancient name; for the element CIL is common to all primitive European languages, and universally signifies in geography country that is or formerly was thickly wooded; and has found its way in more modern times back into our own language, from the Latin, in the word "sylvan."*

The name of Chiltern was bestowed upon the forest by its earliest inhabitants, the Celts; and a considerable portion of the names of the natural creatures of the district are Celtic, though in a Saxonised form. Such are the names of the springs and streams; the names of several hills—Penn, Coles-hill, Knaphill, Keep-hill,

* The Cil is softened in Anglo-Saxon into Chil by a process peculiar to the latter tongue. The element is traceable in many names in Italy, Spain, Germany, Bohemia, France, and Greece—wherever, in short, the Celtic tribes made permanent settlements.

Haveringdon-hill (West Wycombe), &c. All these the Saxons must have found in use, and incorporated into their own language, like many elements in common names. The district is described by the name of Ciltern in the earliest known division of Saxon England, given by Camden (*Magna Britannia*, in Jansson's *Novus Atlas*, vol. 4, p. 65), on the authority of the celebrated jurist Francis Tate. This singular list probably dates not many years posterior to the Saxon invasion; and the precise meaning of the several strange names by which the divisions are denominated is not yet determined by antiquaries; but we find among them plainly and unmistakeably that of *Ciltern-setna*, which is stated to contain seven thousand hides.* Here, then, we have the earliest documentary evidence of the name. Probably the whole of the district now called Buckinghamshire was included in it; and no one will deny that for harmony, propriety, and convenience, the ancient name is to be preferred before the modern, or its vulgar abbreviation into *Bucks*.

But how came the old name to be cast out? What reason induced the surveyors who settled the county boundaries and fixed the county names by order of Alfred the Great, to exchange the ancient and significant name of Chiltern for one borrowed from a little town in a remote corner of the district? The reason is, that the Chiltern forest was of little political importance—it had no towns or villages to speak of till a long time after the neighbouring vales had become thoroughly populated. And such importance as it possessed, was rather of a negative than a positive kind; for after the Danish invasions had ceased it was in the worst possible reputation as the stronghold and hiding-place of innumerable thieves, murderers, and scoundrels of all sorts. Thither retired all the vagabonds whom the peace threw out of employment—the discontented and disaffected—who together with the numerous original members of the most ancient trading company in the world, the freebooters, acquired for the name of the Chiltern forest an odour which was many centuries

* The list only includes the cis-Humbrian part of the island, which is divided into thirty-four districts, the largest, Wessex, containing 100,000 hides, and the three smallest only 300 hides apiece. The only names besides Chiltern which I can identify with existing divisions are those of Kent, Essex, Sussex, and the Isle of Wight.

lingering about it. So late as the time of Queen Elizabeth Drayton could write, in his *Polyolbion*—

“Here (in the Chiltern hills) if you beat a bush, ’tis odds you start a thief.”

The ancient office of Steward of the Chiltern Hundreds, though useful for political purposes, is now of the smallest possible importance to the Chilterners themselves. The original steward was some valiant knight—some sturdy cavalier who willingly resigned the glorious career of a soldier abroad for the less honourable but more useful life of a policeman at home; whose duty it was to protect peaceful citizens who had occasion to journey through its recesses, and to keep in check the marauding villains who infested it. He and his myrmidons, however, seem to have made little head against the nuisance. The Abbot of St. Albans was at last obliged to take the matter in hand, for the security of travellers to and from his Abbey. First, he proceeded to cut down as much of the forest as possible—more, I imagine, in his own vicinity than in South Buckinghamshire; then to make convenient roads, and then to hand over one of his manors to two stout soldiers (I forget their names), to be possessed by them on condition of their assisting the Steward of the Hundreds in his exertions to preserve the peace of the neighbourhood.*

Such is the story as you read it in the *“Lives of the Twenty-three Abbots,”* by Matthew Paris. There is abundant confirmation of the main facts which the old chronicler relates of the Chiltern district from other sources; but I am a little sceptical as to the additional inhabitants whom he avers to have shared the possession of the forest with the marauding parties aforesaid—namely, wolves, bears, and wild boars, whom these feudal police were also bound, as far as possible, to exterminate. So late as 1368, we find a tenure in the Five Rolls for the destruction of “wolves foxes, martrons, cats, and other vermin” in the county of Buckingham; but it is probable that wolves had been extinct long before that period, in this portion of the island. A wild boar, I believe, was hunted and killed near Penn as late as the last century; but I am not able to give any authentic particulars.

E. J. PAYNE.

(To be continued.)

* The abbot was Leofstan; the knights (there were three instead of two), Thurnoth, Walder, and Thurman; and the manor, Flamstead, in Herts. William the Conqueror took it away from them, and gave it to one of his own adventurers.

What we Found.

IF we wish to convince ourselves of the infinite variety which nature so lavishly spreads before us, we cannot do better than narrowly examine, at the various seasons of the year, one locality, easily "come-at-able," and of definite limits; we shall be astonished at finding how many species of Flowering Plants alone may be gathered in a comparatively small area. Most of our readers know the straight piece of road, about two and a half miles in length, which extends from High to West Wycombe. On the right hand side is a hedge, high in some parts, and very dusty; on the left, a lower hedge, between which and the road is a narrow grassy patch. While walking along this road on the 11th of June last, it occurred to us to gather a specimen of each plant then in blossom on the right hand side of the road alone; and on arriving at West Wycombe we found that our bouquet numbered fifty-eight species! Besides these, there was at least an equal number, the blossoms of which had either not yet expanded, or had already withered; and we do not in the least exaggerate, when we state that one hundred and twenty species of British plants flower, at different times of the year, in this dusty hedge, all widely varying one from the other in many important particulars. The number on the other side of the road would doubtless have been far greater. The railway, on one side, which produces the rarer species of Salad Burnet (*Poterium muricatum*) and the Woad (*Isatis tinctoria*), has its own distinct class of plants; and so has the river, on the other side of the road: all of them interesting, many of them beautiful, some of them rare. We may mention that among the fifty-eight species gathered were the Long-stalked Crane's-bill (*Geranium columbinum*) and Buxbaum's Speedwell (*Veronica Buxbaumii*), neither of them common, and that the Yellow Stonecrop (*Sedum acre*)

appears truly wild at the foot of the hedge between Bird-in-hand and West Wycombe station. Let none, therefore, imagine that they need go far afield to increase their botanical lore: they will learn more from the careful examination of the plants on a single acre of ground, than they will by scampering hastily over miles of country in search of rarities. To such of our Wycombe friends as desire to commence studying our Wild Flowers for themselves, we would say—Go to Hollow Lane at least once a week for a year; bring home specimens of every plant, common or rare, which you may perceive: count them up, study them, watch them expand, you cannot fail to find a never-ending source of pleasure and amusement which will supply you with food for reflection for many days. And if, in any of your rambles, you find a rare plant, take no more of it than is necessary for your purpose, leaving the rest for any one else who may want it, remembering that an Exterminator is unworthy the name of a Botanist.

You must not say that this cannot be, or that that is contrary to Nature. You do not know what Nature is, or what she can do; and nobody knows. Wise men are afraid to say that there is anything contrary to Nature, except what is contrary to mathematical truth; for two and two cannot make five, and two straight lines cannot join twice, and a part cannot be as great as the whole, and so on (at least, so it seems at present): but the wiser men are, the less they talk about “cannot.” There are dozens and hundreds of things in the world which we should certainly have said were contrary to Nature, if we did not see them going on under our eyes all day long. If people had never seen little seeds grow into great plants and trees, of quite different shape from themselves, and these trees again produce fresh seeds, to grow into fresh trees, they would have said, “The thing cannot be; it is contrary to nature.” And they would have been quite as right in saying so, as in saying that most other things cannot be.—REV. C. KINGSLEY.—“*Water Babies.*”

Proceedings of the Society.

May 19th.—The members met on KEEP HILL for their first field day this year. Some little time was spent in examining the chalk-pit, but scarcely any fossils were found, and they then rambled across the hill. Among the many flowers just appearing were the Milkwort (*Polygala vulgaris*), the Cross-leaved Bedstraw (*Galium cruciatum*), the Horse-shoe Vetch (*Hippocrepis comosa*), &c. *Orchis mascula* was in full bloom; *O. maculata* had only put in an appearance of leaves. The Barberry (*Berberis vulgaris*) was covered with its lemon-coloured blossoms at the foot of the slope. Among the insects were seen a few specimens of the Holly Blue (*Lycæna Argiolus*), which is rather rare in this locality; *Læcon murinus*, *Cicindela campestris*, and several other beetles were flying about, while the body of a hedgehog yielded several *Carabidæ* or Burying Beetles. From Keep Hill the members passed into Dane Garden Wood, where they noticed the Coralwort (*Dentaria bulbifera*) in flower, and several Orchids just appearing.

June 9th.—Ramble in HOLLOW LANE. An hour or two passed very pleasantly in this curious old lane, which has attracted the attention both of the archæologist and the geologist in no small degree; the former looking upon it in the light of an ancient road for packhorses, &c., from the neighbouring settlements on the hills to the more populous valley; the latter as a still more ancient watercourse, along which a torrent rushed to join some larger body of water in the present Hughenden valley. Probably both are right, at any rate the views are not opposed to each other, since there is many a similar ravine in Devonshire at the present day which is used for traffic in summer, but is impassable in winter. Hollow Lane is famous alike for its flowers and its insects—the botanist or entomologist who has not examined it has a treat yet to come. In the course of the ramble the members found several larvæ of Sawflies, a fine specimen of one of the *Chrysomelidæ*, larvæ of Oak Egger (*Bombyx*

Quercus), Drinker Moth (*Odonestis potatoria*) with a few Loopers. The spindle tree was in one or two spots one mass of webs of the little Ermine Moth (*Yponomeuta euonymella*) which were now deserted, and a nest of the larvæ of *Eriogaster lanestris*—the Small Egger Moth, not very common in the neighbourhood until this year, was found on a sloe bush. Curiously enough there appear to have been but a very few seen here before, one was found by the Society in a ramble last summer, and another a year or two before, but a fortnight ago the Secretary in a walk to Marlow saw on one side of the road only no less than seventeen nests, each crowded with inhabitants.

Mr. Britten exhibited a curious specimen of the Ribwort Plantain (*Plantago lanceolata*) from Oakridge, having seven or eight spikelets at the base of the usual spike. In the lane were *Geranium columbinum*, and one or two commoner species, and the Rock Rose, which excited great admiration from its size, and the irritability of the stamens: at the top were found the Squinancywort (*Asperula cynanchica*), the Cathartic Flax (*Linum catharticum*), and the Tufted Horse-shoe Vetch (*Hippocrepis comosa*). Various grasses in flower were also pointed out.

BESIDES their mere scientific value, these pursuits offer in themselves alone a precious reward. They beguile the dull routine of professional and other employments, cherish gentle thoughts and calm desires, and multiply and refine our enjoyments; they endear many a rural walk with delightful associations of "each lane and every alley, dingle, or bushy dell, and every bosky bourn from side to side;" they may soften solitude or affliction; they must impress us with meek and touching lessons of the means of happiness so bountifully spread before us, and of how cheaply some of our best pleasures may be purchased. And, above all, while thus teaching us to look for the good and the beautiful in surrounding objects, and helping us to the true riches—those large and best possessions—of contentment and thankfulness, they may incline our minds to the grateful habit of "looking through Nature up to Nature's GOD."—PROFESSOR GULLIVER.

Correspondence.

All communications relating to advertisements, contributions, or the supply of this magazine, should be addressed to the Editor, care of Mr. Ulyett, High Wycombe. Contributions must be sent in before the 15th of the month preceding the date of publication. The Editor will be glad to receive notes concerning any of our local plants and animals, their times of appearing, their popular names and traditions, abnormal forms and colours, &c.; these must be authenticated by the writer's name and address, but not necessarily for publication.

WHITE-FLOWED WOOD (DOG) VIOLET (*Viola sylvatica*).—Three specimens of this somewhat rare variety were gathered by Mr. Frank Wheeler on the 30th of April last, in Adder's Lane, leading down from Totteridge to the London Road. The petals were much narrower than is usually the case, and, as well as the spur, were quite white: in shape they resembled those of *V. Reichenbachiana* (a narrow-petalled form with *unbranched* veins, not hitherto observed in the district) rather than those of our common *V. Riviniana*; but the *total absence of coloured veins* renders it impossible to state positively that our plant belongs to the former sub-species. The blossoms emitted a faint sweet scent, quite different to that of the sweet violet (*V. odorata*).

JAMES BRITTEN.

PLANT NEW TO THE DISTRICT.—On May 18th, I found in a field of Trefoil near Oakridge, several fine specimens of the Field Mouse-ear Chickweed (*Cerastium arvense*), which has not been previously observed in the district. Its situation precludes me from supposing it to be truly *wild* there; but, as it is by no means unlikely to occur on banks, I may mention that it may be distinguished from the Common Mouse-ear Chickweed (*C. triviale*) by the size and whiteness of its blossoms, somewhat resembling those of the Great Stitchwort (*Stellaria Holostea*).

Id.

LAND EFTS.—Some boys a short time ago were finding these creatures in Wycombe Park, and were gravely cautioned by a man against getting bitten by them, as "there was no cure for it."

A.

INSTINCT v. REASON.—The following anecdote of a Crow found in Ceylon (*Corvus splendens*), which resembles our Magpie in its habits, is given by Sir E. Tennent:—"One of these ingenious marauders, after vainly attitudinising in front of a chained watch-dog, that was lazily gnawing a bone, and after fruitlessly endeavouring to divert his attention by dancing before him, with head awry and eye askance, at length flew away for a moment, and returned bringing a companion which perched itself on a branch a few yards in the rear. The crow's grimaces were now actively renewed, but with no better success, till its confederate, poisoning itself upon its wings, descended with the utmost velocity, striking the dog with all the force of its strong beak. The ruse was successful; the dog started with surprise and pain, but was not quick enough to seize his assailant, whilst the bone he had been gnawing was snatched away by the first crow the instant his head was turned. Two well-authenticated instances of the recurrence of this device came within my knowledge at Colombo, and attest the sagacity and powers of communication and combination possessed by these astute and courageous birds."

"It was about the middle of last April, when I observed a young lamb entangled amongst briars. It had, seemingly, struggled for liberty until it was quite exhausted. Its mother was present, endeavouring with her head and feet to disentangle it. After having attempted in vain, for a long time, to effect this purpose, she left it, and ran away bleating with all her might. We fancied there was something peculiarly doleful in her voice. Thus she proceeded across three large fields; and through four strong hedges, until she came to a flock of sheep. From not having been able to follow her, I could not watch her motions when with them. However she left them in about five minutes, accompanied by a large ram that had two powerful horns. They returned speedily towards the poor lamb, and as soon as they reached it the ram immediately set about liberating it, which he did in a few minutes by dragging away the briars with his horns."—*Loudon's Magazine* for 1831.

DR. JOHNSON AT FAULT.—"Swallows," said he, "certainly sleep all the winter. A number of them conglobulate together, by flying round and round, and then all in a heap throw themselves under water, and lie in the bed of a river."

IS GEOLOGY A DRY STUDY?—"In the course of the first day's employment I picked a nodular mass of blue limestone, and laid it open by a stroke of the hammer. Wonderful to relate, it contained inside a beautifully finished piece of sculpture,—one of the volutes, apparently, of an Ionic capital; and not the famed walnut of the fairy tale, had I broken the shell, and found the little dog lying therein, could have surprised me more. Was there another

such curiosity in the whole world? I broke open a few other nodules of similar appearance,—for they lay pretty thickly on the shore,—and found there might be, for in one of these there were what seemed to be the scales of fishes, and the impressions of a few minute bivalves, prettily striated; in the centre of another there was actually a piece of decayed wood. Of all Nature's riddles, these seemed to me to be at once the most interesting and difficult to expound. I treasured them carefully up, and was told by one of the workmen to whom I showed them, that there was a part of the shore about two miles farther to the west, where curiously shaped stones, somewhat like the heads of boarding pikes, were occasionally picked up. I went, and found the place a richer scene of wonder than I could have fancied even in my dreams."

HUGH MILLER.

MARTINS.—The martins (*Hirundo urbana*) appeared in this neighbourhood about the sixth of April, and by the end of the month they were to be seen in great numbers. The first of May was, however, an unhappy day for them; seldom do we recollect a more cold and chilling commencement of the "merrie month." The poor martins were to be seen huddled together in dozens, cold and miserable, shrinking from contact with the cutting easterly wind and cold driving rain. In the morning numbers of them were found dead—victims to the inclemency of the season.

T. MARSHALL.

CATERPILLARS.—The caterpillars forwarded to us were the larvæ of the "Drinker," a very handsome moth (*Odonestis potatoria*), one of the Bombycidae.

Autumn.

THE chilly mornings of autumn are beginning to prevail, although, as yet, they are only the forerunners of bright sunny days; and nature is doffing her cheerful robe of green for a motley garment of gold and brown, gayer perhaps on the exterior, but a sign of decay within.

“There is a beautiful spirit breathing now
Its mellow richness on the clustered trees.”

Look at our glorious woods, as the beams of the Autumn sun gild their summits, and say is not the year lovely in its decay? Look at those splendid masses of green foliage, crowded on the lower branches of the elm, dying away upwards into a lighter hue; see the glowing red of the beech, the bright yellow of the chestnut, set off here and there by the sombre green of the firs. The old age of the year is to us ever a lovely season, and yet, we confess, it is sad withal, for it speaks so plainly of Death, that it cannot be misunderstood. What say ye who profess to believe in the “Religion of Nature” only? Does she not speak in plain words? There is a death of all things around us every year, but a resurrection follows; we see it in every living thing; there is nought but change, yet there is no destruction, the same elements reappear in a new form, nothing is lost, it comes back again clothed anew in finer apparel.

Our autumn rambles may not perhaps be so productive as those we took in the summer, yet they will be none the less interesting. We may note the retirement of each bird and beast to its winter quarters, and we may also hail the arrival of our northern visitors. The martins are to be seen now congregating on our roofs, and exercising for their long journey; among the osier beds or *aits* of the Thames they may be found roosting by hundreds every night, appearing when disturbed in the dusk like a thick cloud. The Swift left us by the middle of August; his stay is always short, he is the first of his family to come, and the

first to go; the Sand Martin we never see at Wycombe, there being no suitable places for nidification. The song of the bird is hushed in the fields, the Robin only continues to enliven us with his cheerful warblings, and this he will do the winter through, joined occasionally by a Skylark. Strange that the feathered tribes should only send out their joyous carollings through such a short period of the year—that of rearing their young; it would seem that love is then “the lord of all,” and is thus shown; for when their duties are finished the love and the song cease too. The insects flit lazily about, the bee and the wasp put in an occasional appearance, and a few stridulous sounds from the grasshopper and cricket emerge from warm grassy banks; the dormouse and the squirrel are hoarding up their supply of winter provisions, and snails are congregating in colonies under the tangled roots of the trees; all the busy hum and music of summer are dying away.

But fresh sights of beauty meet the eye as we ramble along our lanes; festoons and bunches of ripe fruit of every colour decorate the fading masses of leaves—the dark berry of the Dogwood shadowed by the purple foliage and “ensanguined” stems, the shining black berries of the Privet, the brilliant fruits of the Woody Nightshade, and the Red and Black Bryony, the dark purple of the Guelder Rose—all looking so very beautiful that we feel tempted to try their flavour. But beware; many of them are forbidden fruits, and may bring on a sleep that knows no waking. More harmless are the “scarlet hips and stony haws” that cover the rose and hawthorn—the food of many a truant schoolboy since Cowper’s days.

Very soon we shall have the mosses out in all their beauty, and as we hunt among them we shall turn up many a beetle and caterpillar, snugly ensconced for the winter, abiding marvellously without food during the long months when vegetation would yield them nothing: these, and hosts of other things will pass under our notice only by our exercising a moderate amount of observation. So let no one sink into despondency from an idea that there is nothing for the Naturalist to see, and nothing to do till next Spring.

The Snake and Adder.

AS most of the readers of this magazine are aware, we have in this country three species of reptiles of the *ophidian* or serpent tribe, viz., the common snake (*Natrix torquata*), the viper (*Pelias berus*), and the smooth snake (*Coronella lævis*). The last, however, is very rare and local, while the other two are pretty generally dispersed.

From the dread with which these creatures are commonly looked upon, their habits are not much studied or observed; I therefore propose to give a few particulars of the habits of the two common species, premising that the viper, which is our only poisonous reptile, is at once distinguishable from the snake by the deep black chain which extends the whole length of the spine.

The SNAKE, (*Natrix torquata*), although seldom seen unless sought after, is yet tolerably abundant in most parts of the country in damp woods, and the reedy margins of ponds on unfrequented commons, but about Wycombe it appears to be almost unknown.* In order to get a sight, or at any rate, a chance of catching this, or any other serpent or lizard, perfect quiet is necessary. The snake feeds exclusively on frogs and toads. As far as my experience goes, they do not seem to have any preference for the former. When caught they generally throw up their last meal, and those which I have captured have quite as often thrown up toads as frogs. The skin of the snake is shed entire about once a month in summer, and for some days before the event the reptile is perfectly blind. All reptiles (excepting, of course, the *Batrachia*) are excessively fond of basking in the sun, but all do not bask in a similar manner; for instance, the snake lies coiled up in a pyramidal form, while the viper lies stretched out at full length. When first captured snakes hiss loudly. The unpleasant smell that they also make does not arise from their breath as

* It is to be found however by close searching; we have known it caught on Wycombe Heath and at Penn.—Ed.

seems generally supposed, but from a white excrementitious substance which they emit. The viper, relying on his formidable fangs for defence, makes no unpleasant smell. The country folk about Wisley, in Surrey,—my most frequent “hunting-ground” for reptiles,—say that a snake’s cast skin bound tightly round the head is a remedy for headache. These cast skins, which may frequently be found about their haunts, are very curious, as even the hard transparent substance with which all reptiles are provided for the defence of the eyes when swimming is shed with the skin. This transparent substance can be put up at the creature’s will, and when not in use is folded in the lower eyelid. The glossy black tongue of the snake is rather longer than that of the viper. I need not insult readers by saying it is not a “sting.” I fancy it is of use as a feeler, since the animal has no limbs.* The distance between the two extremities of the fork is about equal to the thickness of the reptile’s body, and may be of use, like the whiskers of the cat, in letting it know whether it can get into a hole or not. The usual length of the snake is about three feet, but they often exceed this.

The VIPER, or as it is almost always called by country people, the ADDER, inhabits dry heaths, glades in woods, and upland copses. It is seldom to be found near water. Its average length is twenty-three inches. I have often found them where furze has been lately cut, and it is hard to tell them from the furze stalks lying about. They evidently choose such places to sun themselves in, from the difficulty of being distinguished in them. Were we as well acquainted with their habits as we ought to be, we should doubtless know of many similar proofs of sagacity, which would enable us to appreciate our Lord’s command “Be wise as serpents.” The adder is plentiful in the woods round Wycombe, and on the neighbouring heaths and commons. Mr. Ullyett has met with it most frequently in Dane Garden wood, and on what, alas! *was* Wycombe Heath. Adders vary much in colour, but the colours do not denote different species, and even seem to change periodically in the same individual.

* Although serpents have no exterior legs, their ribs are moveable, and are not fixed to the breast bone, so that they are, in fact, interior legs.

Last May I brought up from Wisley, and deposited in the Zoological Gardens, Regent's Park, one with an almost perfectly white ground-colour. This specimen is now quite a dark brown. The food of the adder consists chiefly of shrews and field-mice. One which I caught last year—the original of the illustration in Mr. M. C. Cooke's work on British Reptiles—threw up three full grown mice, so that adders are of use in keeping down vermin. The fangs of the adder, nearly half-an-inch in length, are situated in the upper jaw. They move on a hinge, and when not in use are folded along the palate. They are hollow, and at the root of each is a little bag of venom, so that the fangs make punctures, and at the same time poison is introduced into the wound. The venom is hurtful from being thus introduced into the blood; it might be swallowed without causing the least injury. It is just to add that the adder *never* attempts to attack a human being except in self-defence. It always glides away into the nearest thicket on hearing any one approach. There is therefore no reason why the creature should be persecuted. This reptile is capable of almost incredibly long fasts. Mr. Ulyett lately kept a couple for six weeks, during all which time they touched nothing but water, although mice, &c., "all alive" were supplied *ad libitum*: yet, when set at liberty, they seemed as lively as when first caught. The adder can climb well, and is not unfrequently found in nests, into which they climb for the sake of sucking the eggs, of which they are very fond. Three were this spring found in a blackbird's nest in Enfield Chase, Middlesex. Adders' fat is in great request among the peasantry as an ointment for cuts, and it is the best remedy for the creature's own bite. There is in serpents, as in all other living creatures very much to admire in the wonderful adaptation of their structure to their mode of life; much to make us acknowledge that the Hand that made them is Divine.

W. R. TATE.

Grove Place, Denmark Hill, London.

"No scientific truth can possibly be too trifling or unimportant to be worthy of preservation."—SIR J. E. SMITH.

Migration.

IT is the pride of Englishmen that their country is open to all the world, that every one, be he a king flying from Revolution or an exile proscribed for his political opinions, finds rest and safety here, so long as he conforms to our laws, and lives peaceably within the pale of our institutions. We welcome all these, and extend to them the hand of fellowship and hospitality—and this although they come here merely for peace and security and not from sympathy with us as a people, or from love or attachment to our national character and constitution. They feel this is not their home, and they live and perhaps die amongst us as mere sojourners in a foreign land. On the other hand, if there be an amnesty for political offenders, or a new era of politics in their own unhappy country, back they stream, sometimes without a tear of regret at leaving us, without a thought of the protection they have received, and often, sad to say, with prejudices only confirmed by the very benefits which should have dissipated them.

How different it is with those humbler beings that visit the shores of England with the regularity and precision of the seasons, and impelled only by the mysterious workings of an infallible instinct. The migration of birds is indeed a wonderful theme for study and reflection. Our feathered friends come among us, the heralds of spring, or harbingers of winter, exemplifying the beautiful working of Nature's laws, and the harmony and regularity subsisting in all the works of God. Our summer visitors stay their allotted time, make England their *home*, build their nests, rear their young, cheer us with their joyous song, and then, with a silent but thankful farewell, take their family back to their winter quarters with the promise, certain of fulfilment, to come back with the bright sunshine of the following year. And yet the migration of birds is with many a subject of little moment, and our feathered friends come and go unnoticed and unknown. This is not as it should be, for the more we study these things,

and notice the wonder, and beauty, and harmony of all creation, the more we are led to ponder and reflect with amazement on the works of the Lord and the operations of His hands.

T. MARSHALL.

The Weather in the British Isles.

THE British Isles enjoy an exceptional position on the earth's surface, as regards temperature; in other words, the English climate would be as extreme and steady both in its cold and hot fits, as other countries lying under the same latitude are (such as parts of Canada, Siberia, Central Russia, and Northern Germany), but for some peculiarities in the Ocean around it which affect the British Isles, but not these countries.

This favourable condition of the temperature is owing to the operation of the Great Gulf Stream in the North Atlantic Ocean. This vast current of water after having basked under the tropical sun in the Gulf of Mexico and so become intensely heated, rushes out of that Gulf northward, until, turned aside eastward by the projecting cliffs of Newfoundland, glancing off, it runs across the Atlantic to Norway, dispensing its high temperature to the air and adjoining waters.

As in this its course it passes north of Ireland and Scotland, it interposes a perpetual broad belt of warm sea between Great Britain and Iceland, and the frozen wastes of the Polar Seas.

The benefit derived by the British Isles, in winter, is that they are surrounded by a sea of temperate warmth.

In summer this ocean current arrests all the floating ice and icebergs that break loose and drift down from Iceland and Greenland, melts them and sweeps their dissolving masses away so that they never cross it to reach and chill our coasts: hence above England northward they never come down so low as the Shetland Islands.

But as the Gulf Stream runs obliquely across the Atlantic, icebergs from Baffin's Bay float down undissolved as low as the latitude of Paris, off Newfoundland, before they fall into it.

So that, far away in the Ocean, from a point westward from the Land's End, to a point northward from Scotland, icebergs many or few may be and generally are floating along and melting during the early summer months.

Although the solid iceberg is thus prevented from reaching us, still the products of their liquefaction diffused in vapour throughout the atmosphere, and the effects of the cold disengaged from them, as they melt under the sun and in the warm Gulf Stream, are swept over England by the wind, in rain, mist, fog, and chilling blasts, not only causing winter to linger in the lap of spring but also dashing summer.

To exemplify these effects in our own seasons, we may instance the weather of this present year, 1866.

The swallow came earlier than usual, in mid-April; and it was summer weather for a fortnight. The ice that encased Iceland broke up, parted, and drifting down into the Gulf Stream loaded the Northern atmosphere with mists and cold; the winter having been unusually severe in Iceland.

Throughout May the cold vapours from the North kept sweeping over England, till the end of May; when the crop of Iceland ice was exhausted, and the atmosphere brightened, and through June and early in July great heat prevailed.

About the middle of July the setting sun went down in a misty sky, and high above the sun a halo slightly prismatically coloured indicated plainly a mass of vapour over the Atlantic. The Great Eastern, dropping the telegraph cable in mid-Atlantic, telegraphed to England, then parched and glowing in the sun, that the ship was in the midst of cold blasts and torrents of rain; ships off Cape Race fell in with large icebergs, and a few days after high winds and chilling rain from the west prevailed in England and Western Europe for a month.

Such being the history of the last spring and summer, and such the undoubted cause of it, it is difficult to persuade one's self that

any rule can be framed by which the greater or less quantity of ice that will be detached from the Arctic Regions, and the times when it will be detached in any year, can be calculated, though it may be reasonably supposed that the earlier and warmer the summer in the Arctic Seas, the more ice will be detached, and consequently the wetter will be the summer in England.

England and Western Europe not only enjoy in the Gulf Stream a power that tempers the coldness of the sea around them; an analogous effect on the air above those countries is produced by the ever glowing surface of the Great African Desert southward. The air which is heated over those burning sands and rocks expands and diffuses its glow over Europe. Its most violent effects are exerted eastward in the Simoon and Samaël or "wind of death" of the Arabs, and towards the north-east in the Sirocco of the Levantines; only its milder effects are felt in Western Europe. S.

August 23, 1866.

AMERICAN BLIGHT.—This common insect (*Aphis lanigera*) which infests apple trees, produces in the course of a season eleven broods of young. The first ten broods are viviparous, or are brought forth alive, and consist entirely of females. These never attain their full developement as perfect insects; but being only in the larvæ state, bring forth young, and the virgin aphides thus produced are endowed with similar fecundity. But at the tenth brood this power ceases. The eleventh does not consist of active female larvæ alone, but of males and females. These acquire wings, rise into the air, and sometimes migrate in countless myriads, and produce eggs, which, glued to twigs and leaf-stalks, retain their vitality through the winter. When the advance of spring again clothes the plants with verdure, the eggs are hatched, and the larva, without having to wait for the acquisition of its mature and winged form, as in other insects, forthwith begins to produce a brood as hungry, and insatiable, and as fertile as itself. Supposing that one aphis produced 100 at each brood, she would, at the tenth brood be the progenitor of one quintillion of descendants (1,000,000,000,000,000,000).—H. PATERSON.

The Chiltern Country.*

(Continued from page 20.)

TAKE Sheet No. 7, of the Ordnance Survey of England and Wales, and cut it in half by a north and south line, and the western moiety will include nearly the whole of the district which I describe as the Chiltern Country. Two portions of the map, however, are still superfluous, and should be shaved off, namely, the triangular corner of the vale of Aylesbury, N.W. of the Icknield way, and the whole of the southern third of the sheet, following the course of the old Bath Road through the villages of Iver, Wexham, Farnham, Burnham, and Hitcham, and thence the course of the River Thames as far as Henley. The Road and the River taken in this way will form the Southern boundary of the Forest.

The old road crossed the river Thames, as far as I can make out, by a ferry in the parish of Taplow, near the island of Formosa. The place is or was called Babham End. Thence the road passes through the village (once ranking as the town) of Cookham, and winding up the hill enters the long waste of open country which goes under the names of Pinkneys Green, Maidenhead Thicket, and Stubbings Heath, and then the tract of woodland called the Frith, passing through the villages of Shottesbrook, the Walthams, Ruscombe, and Twyford. The Berkshire Frith, as we learn from Leland and other early travellers, was in as bad repute as the Buckinghamshire Chiltern. It merged southwards in the wide forest of Windsor.

Here we have our map of the forest ready for use. About the centre of the map the ancient towns of Missenden, Amersham, Wycombe, and Beaconsfield form a sort of Quadrilateral.

The Chiltern forest seems to have consisted principally of beech woods, of which extensive remains are still left. The valleys were

* ERRATA in No. 1. First portion of this paper, page 18, third line from the bottom, for *creatures* read *features*. Page 20, sixth line from the bottom, for *Five Rolls* read *Fine Rolls*.

mostly in a marshy state, and probably subject to floods. It appears to have been peopled by the Celts or ancient Britons, who may have enjoyed possession of it for many centuries previous to the Roman Invasion.

Besides the few worn remnants of the Celtic tongue found in local names, there is evidence of this in the numerous earthworks which are still traceable in the forest, and in the roads or drift-ways which lead up and along the hills, which are of the type usually recognized as Celtic. The Wycombe and Amersham valleys afford numerous examples of these roads, each leading to some mill on the stream, or to some place where a mill formerly stood. From this one may infer that the water-mill was known to the Celts.

The roads or drift-ways in the forest appear to have been of local origin, and to have had no other object than that of ready communication between hill and valley. With one exception, my endeavours to make out continuous routes through the forest have been fruitless. This exception is a long, straggling road, which for distinction's sake, I call by what appears to have been one of its names, *Hollow Way*. I first noticed its peculiar formation in Piper's Wood, in the parish of Amersham, where it crosses the Amersham valley, whence I easily traced it to *Penn Street* (a name which decidedly confirms the notion that it is an ancient thoroughfare road). From *Penn Street* it leads to Beaconsfield, of which town it forms the main north and south thoroughfare; and a farm which stands near it, a mile or two beyond Beaconsfield, is still called *Hollow Way* farm. Here it leaves Burnham Beeches on the right, and enters the tract of now enclosed land which was formerly Farnham Common.

Northwards from Piper's wood the road leads by way of Weedon Hill, to the town of Chesham, of which it forms the main street. Next it passes along Chesham Bottom and by the village of Hawridge to Cholesbury Common. Leaving the church of Cholesbury, and the large Celtic circular camp on the left, it proceeds, winding between the woods, for two or three miles, till it crosses the Turnpike road from Aylesbury to Tring and London. Here

it severs the Counties of Buckingham and Hertford (a sure sign of its antiquity as a road dating from before the time of Alfred the Great), and is best known as *Shire Lane*, from this circumstance. Crossing the turnpike road, it strikes directly through the village of Drayton Beauchamp, where it is still well-known as *Hollow Way*. Beyond the point where it crosses the Aylesbury canal, in the parish of Drayton, I have not endeavoured to trace it; but I make no doubt it was intended as a line of communication from the vale of the Thames to the vale of the Ouse, and was so used by our Celtic forefathers. It is accompanied by several circular intrenchments, which were the settlements (*oppida*, as Cæsar calls them) of the inhabitants. Besides that at Cholesbury, there is a remarkable one at Hawridge, and there are two in the parish of Great Missenden, within a few hundred yards of the road. The road may perhaps have terminated at or near the enormous entrenchment or *oppidum* in Bulstrode Park, in the parish of Fulmer.

This remarkable camp is believed by some Buckinghamshire archæologists to be the identical town or *oppidum* of the Britons which Julius Cæsar took and sacked. Verulam or St. Albans contests this honour with it. The principal objection made to the claims of the Chiltern forest is, that Cæsar specially excepts the *beech* and the *fir* from his list of the trees which grew in Britain: all sorts, he announces, are to be found, "*præter fagum et abietem*." Hence, the argument proceeds, Cæsar evidently could never have visited Buckinghamshire. This, however, we get over easily enough, by replying that the *fagus* means, not *fagus silvatica* of the Chiltern hills, but *fagus castanea* or Spanish chestnut; and the *abies* the silver fir, or foreign deal, neither of which is indigenous to our island, though they flourish abundantly when planted. Whitaker, in his History of Manchester, states that the Romans found the fir in Britain, but imported the Beech—probably in the same vessel which introduced the Cuckoo!

We have positive arguments in favour of Buckinghamshire and the Chiltern forest being the scene of Julius Cæsar's invasion and sojourn in Britain. Cæsar tells us he crossed the Thames. The

Celts under Cassivellanus had driven rows of sharp stakes along the bank of the river to impede his passage. The Romans, however, forded the stream, and the Britons fled in terror and confusion. The historian Polyænus, gravely avers that the Britons were strangely affrighted by the additional terror of the castled Elephants of the Orient, which the Romans brought with them. The Elephants, according to the only construction of which his account seems capable, dashed into the bed of the river, and aided materially in the rout and chase of the natives to their forest stronghold. The truth of this is a matter of opinion. With or without Elephants, Cæsar and his legions did cross the Thames.

Antiquaries differ as to the place where this took place. The old opinion was in favour of Shepperton (the principal authority being the possession on the part of Lord Onslow of some dessert knives and forks, the handles of which were made from the stakes found in an old wear at that place). But it appears that these stakes were placed across the bed of the river, instead of longitudinally, to prevent the passage; and Mr. Daines Barrington, who examined the place to ascertain the truth, was convinced that they had been placed there by fishermen. The Venerable Bede asserts that they were to be seen in his time, and that they were at least as thick as a man's thigh, and immoveably bedded in *lead*! Sir R. C. Hoare argues in favour of Richmond.

Cæsar expressly says that he crossed the river into the territories of Cassi-vellanus, or of the Cassii (Cassi-vellanus meaning King of the Cassii.) The tribes described by the Roman Geographers as Cassii or Cattieuchlani, are understood to have occupied the part now forming Buckinghamshire, Bedfordshire, and perhaps part of Middlesex. This fixes the place of crossing at any rate to some spot at no great distance from the camp of Fulmer. This camp was evidently an important Celtic stronghold—the largest in the district, and in all respects the likeliest to become the immediate refuge of the retreating Britons.

E. J. PAYNE.

(*To be continued.*)

Mosses.

ALTHOUGH Mosses are among the minute and seemingly insignificant of Nature's works, they, in common with other cryptogamic forms of vegetation, deserve a share of attention even from those who may not make them objects of scientific study. The moss growing upon the wall-top is looked on by many with an eye of indifference, if not of contempt; but to those who will take the trouble to examine its structure, it affords a source of infinite admiration. We presume that none of our readers, in this enlightened age, think that because objects are small, they are on that account unworthy of investigation: otherwise, as has been remarked, "The horse is superior to its rider," and one of old—Solomon, the wise king of Israel, has set us an example in this very particular, by being conversant with the "Hyssop" on the wall, which by Hassalquist is regarded as a minute Moss, still found on the walls of Jerusalem.

Mosses are no less numerous and varied than beautiful; they abound all over the kingdom, and some may be found at all seasons of the year; affording in our daily walks a fund of instruction and pleasant amusement. Let our readers then not be satisfied with the perusal of these brief remarks, but let them at once proceed in their rural walks to collect these objects of study, which may be examined at home by the aid of a good pocket-lens, a penknife, and a pair of scissors. The chalk hills and cliffs of our own beautiful Buckinghamshire abound in mosses: they are to be found on tree, rock, and stone, in damp places, by the side of brooks and rills; indeed, they are so numerous that it has been calculated that one-fourth of the vegetable kingdom is composed of them. In addition to the pleasing recreation afforded by the study of these interesting objects of creation, the soul may also be led to look from nature up to nature's God!

NELLIE ATTY.

The Large Wood Wasp.



WE have had several specimens of this insect brought to us the last year or two, with special requests to know its name, and whether it was English or Foreign. In answer to the former we said it was a Wood Wasp, and to the latter query we said "Both." It is met with most commonly perhaps in grocers' shops among the sugar, sometimes alive and sometimes dead; it emerges occasionally from the floor of a room, having spent a portion of its life in a wooden prison; but wherever it is seen it causes some little terror from its great size, and the length of its ovipositor. A short account of it may not be uninteresting to our readers.

It belongs in the first place to that order of insects, called the HYMENOPTERA, from the fact of their possessing four transparent membranous wings: in this order are included the bees, wasps, ichneumons, sawflies, &c., from which it will be seen that the highest order of insect instinct is comprehended in it. In the next place it is included in the family *Siricidæ*, and it rejoices in the scientific name of *Sirex gigas*, the Giant Wood Wasp, Sawfly, or Ichneumon. It is, as we before said, a formidable looking creature,

of a deep yellow hue, having the thorax and a band round the abdomen jet black. The wings and antennæ are yellow, the latter being of very great length: the long pointed weapon, commonly looked upon as a sting, is the instrument with which the female bores holes in living wood, in which to deposit her eggs. There is an interesting account of this process, in *Science Gossip* for August, written by a gentleman who watched it, waiting with a true naturalist's patience for twenty-three minutes while a lady *Sirex* deposited her eggs in a new larch telegraph post. This ovipositor is of a complicated nature when examined under the microscope, but not so much so as that of some of the true sawflies. The insect is able to give a slight wound with the weapon, irritant in its nature, but not envenomed. The eggs hatch into grubs which feed upon the soft moist wood, and doubtless when present in any considerable numbers, they do much damage. Many are imported from abroad, both in the larva and pupa state, in deal, and from this in due time, they escape as winged inhabitants of air. When this happens in a nursery, we may excuse the alarm of the non-naturalist nurse and her progeny. We have caught them ourselves among the fir trees in Whittington Park.

. We are indebted for the accompanying engraving to Mr. HARDWICKE, of 192, Piccadilly.

"Some folks have a great liking for the poor little Efts. They never did anybody any harm, or could if they tried; and their only fault is, that they do no good—any more than some thousands of their betters. But what with ducks, and what with pike, and what with sticklebacks, and what with water-beetles, and what with naughty boys, they are "sae sair hadden doun," as the Scotsmen say, that it is a wonder how they live; and some folks can't help hoping, with good Bishop Butler, that they may have another chance, to make things fair and even, somewhere, some-when, somehow.—REV. C. KINGSLEY.—"*Water Babies*."

Wycombe Butterflies.

OUR VANESSIDÆ.

THE butterflies in this family are the most gorgeously coloured of any found in Great Britain; and with one exception they are very plentiful. These two considerations lead me to believe that a short account of such species as are to be seen in this locality cannot fail to be interesting to the readers of the Wycombe Quarterly. Who has not gazed with interest and wonder at the lovely Io, fanning its peacock wings in the sun as it sits on a flower and extracts its nectar, or at the stately Atalanta, the Red Admirable, with its magnificent contrast of scarlet and black sailing along the pathway and then disappearing over the high hedge? The boy is filled with the ardent desire to possess the treasure; the thoughtful man desires to know something of the life history of these living gems.

The early part of their lives, however, is not what we might expect; to the general observer they are then unsightly looking creatures, devouring the foliage of the elm, thistle, or despised nettle. They are passed by as if they were worthless, neglected because of their more than homely garb, and when you assure him that they will one day be gaily coloured butterflies he starts, and says "impossible." But the naturalist knows the interest attached to the shunned caterpillar; he takes it home, provides it with food, watches it with delight and astonishment day by day, as it passes through its various changes and the little "ills that flesh is heir to;" and he is rewarded at last by seeing it emerge from its chrysalis case a bright and happy thing of air. Let me assure my readers that there is nothing that will prove so interesting and fascinating to them as lovers of nature than the rearing of butterflies through all their stages; it is so easily done, and

there is comparatively so little trouble attached to it, that no one can complain of having no time for it.

There are seven British species of the genus *Vanessa*; of these three are always common round Wycombe, one is occasionally very plentiful and another has been found but a few times; two we do not possess at all. I will take them in the order of their relative abundance.

THE PEACOCK. *V. Io*. There is not the slightest need to describe this, as every one has seen it. It is found on the wing most plentifully in August and September, but many individuals will be seen in the spring; these are not in such good condition, having slept away the winter in some snug corner in an outhouse or a stack of wood, and now reappear to lay their eggs and then to die. The caterpillar is black, sprinkled with very minute white dots, and is covered with short branched spines; it feeds on the nettle in companies; in 1865 I found them by hundreds in Hollow Lane, but they have not been nearly so plentiful this summer.

THE SMALL TORTOISE-SHELL. *V. Urticeæ*. This is a smaller butterfly than the last, but very prettily coloured with black, orange, blue, and yellow. There are two broods of it every year, one in May and June and another in August. They hybernate like *Io*, and there is an interesting account in the *Zoologist*, p. 5000, of the capture of a hundred of them at Christmas, 1855. The larva is of a yellowish grey colour, but the depth of shade varies very much, there is a broad dark line down the back, and the whole of the body except underneath is covered with spines.

THE RED ADMIRABLE. *V. Atalanta*. This species, known commonly as the Red Admiral, is distinguished at once by the brilliant scarlet bands across its front wings, and a border of the same on the hind wings, and surpasses every other British butterfly in the combined simplicity and vividness of its colouring. The under side is most exquisite, and entirely baffles description. The caterpillar feeds on the nettle, and the perfect insect emerges in August.

THE PAINTED LADY. *V. Cardui*. This is not nearly so common as the former species, and sometimes one is not seen for a

whole season. It was pretty plentiful in 1865 on Downley Common, and I have seen it two or three times much nearer Wycombe. The colouring is very beautiful, consisting of marblings of black and a rich rosy red, with white spots in the fore corners rather smaller than those of *Atalanta*. The caterpillar feeds on thistles and nettles. The perfect insect appears in August—sometimes earlier.

THE LARGE TORTOISE-SHELL. *V. Polychloros*. I have not had the good fortune to meet with this at Wycombe, but the Rev. T. H. Browne had a colony of the larvæ in his garden on an elm tree, from which he reared imagos. The colouring much resembles that of *Urticæ*, but there is no fear of confounding the two if notice be taken of the outermost spot on the front wings—it is yellow like the others, while the same spot on *Urticæ* is pure white. *Polychloros* is generally much larger than *Urticæ*.

The caterpillars of all the above species are thorny and very sombre in their colouring; the chrysalises are angular, suspended by the tail, and generally adorned with golden spots; I have seen those of *Urticæ* completely washed in gold. The imagos of all hibernate occasionally.

HY. ULLYETT.

List of Wycombe Hawk Moths.

EYED HAWK MOTH	<i>Smerinthus ocellatus</i> ..	Plentiful.
POPLAR	<i>S. populi</i>	„
LIME	<i>S. tilie</i>	„
DEATH'S HEAD ..	<i>Acherontia atropos</i> ..	Common in 1865.
CONVOLVULUS	<i>Sphinx convolvuli</i>	Very rare.
One specimen taken to Mr. T. P. Lucas in 1863.		
PRIVET	<i>S. ligustri</i>	Very common.
ELEPHANT.....	<i>Chærocampa Elpenor</i> ..	Not very plentiful.
Larvæ in the Park, 1865.		
SMALL ELEPHANT..	<i>C. porcellus</i>	Found by Mr. Gaviller.
HUMMING BIRD ..	<i>Macroglossa stellatarum</i>	Common till this year.

HY. ULLYETT.

Proceedings of the Society.

July 17th.—The members had an evening ramble for the sake of those to whom it is inconvenient to attend in an afternoon. They went by train as far as WEST WYCOMBE, where they alighted and commenced exploring. Mr. Britten joined them here, and showed a bunch of *Cuscuta Trifolii*, a vegetable parasite on clover, cordially detested by farmers; also some Self Heal (*Prunella vulgaris*), with pink flowers. In the yard by the station, a considerable quantity of Vervain (*Verbena officinalis*) was growing; this is the sole British representative of the gay verbenas of our gardens. Haveringdon Hill was then ascended, and the Mausoleum and old British earthwork examined. On the walls of the former were some well-developed specimens of *Asplenium rutamuraria*, the Rue-leaved Spleenwort; it also grows on the walls of the church, but does not there reach such perfection. The view from this hill, both east and west is exceedingly beautiful, and to the geologist, particularly interesting, the high yet gently sloping hills pointing out in an unmistakeable way the shores of an ancient sea. The south side is almost covered with numerous very old Yew trees, which appear to have been planted here many years ago. The Stemless Thistle (*Carduus acaulis*) is plentiful on the slopes, and *Calamintha officinalis*—the Common Calamint in the ditch at the summit, and on the banks at the foot.

Underneath the hill is an artificial cave cut in the chalk, for a length of about a quarter of a mile: into this the members descended, and were much gratified. No traces of fossils could be detected anywhere, but a "fault" was noticed in one place where there had been a slip of about a couple of feet or more. On an old piece of wood was found a quantity of microscopic fungi. The cave is a great resort of bats in the winter, among which has been found the Lesser Horseshoe (*Rhinolophos hipposideros*); but of course none were "at home" now. The members returned on

foot along the high road, where they found the Cat-mint (*Nepeta cataria*) locally abundant.

The unfavourable weather has prevented the Society arranging another field day since the above.

* * * The first of the winter evening meetings will take place on Tuesday, October 9th, when the President has invited the members to meet at his house. A paper will be read, and objects of interest exhibited.

USES OF ANIMALS.—The following facts will give us some idea of the way in which the abundance of animal life affects human industry :—

In 1855 we imported 26,500,000 goose and swan quills. In 1856 we imported 2,188,737 squirrel skins. No monkey skins were worn as muffs before the Exhibition of 1851; now we import hundreds of thousands. This is bringing the African races more into contact with Europeans, and so furthering the work of civilisation. (It augurs ill however for the monkeys.)

Upwards of 100,000 ermine skins are imported annually; 15,000,000 leeches are annually used in this country, and 500 tons of bees wax: 12,000 bears are killed every year for the sake of their skins.

DR. LANKESTER'S LECTURES.

It would appear from a comparison of the observations of Messrs. Bousingault and Humboldt, separated by an interval of thirty years, that South America is gradually sinking, and if this process be continued, at some distant epoch it may even be submerged. The observations show that the altitudes of the Andes were less when taken the second time; and these results are confirmed by the fact that the snow-line in this range of mountains, has, in the interval referred to, apparently risen.

DR. LARDNER.

THE system of the universe forms one grand complicated piece of celestial machinery; circle within circle, wheel within wheel, cycle within cycle; revolutions so swift, as to be completed in a few hours! movements so slow, that their mighty periods are only counted by millions of years. Are we to believe that the Divine Architect constructed this admirably adjusted system to wear out and to fall in ruins, even before one single revolution of its complex scheme of wheels had been performed? No; I see the mighty orbits of the planets slowly rocking to and fro, their figures expanding and contracting, their axes revolving in their vast periods; but stability is there. Every change shall wear away and after sweeping through the grand cycle of cycles, the whole system shall return to its primitive condition of perfection and beauty.

ORBS OF HEAVEN.

Correspondence.

All communications relating to advertisements, contributions, or the supply of this magazine, should be addressed to the Editor, care of Mr. Butler, High Wycombe. Contributions must be sent in before the 15th of the month preceding the date of publication. The Editor will be glad to receive notes concerning any of our local plants and animals, their times of appearing, their popular names and traditions, abnormal forms and colours, &c.; these must be authenticated by the writer's name and address, but not necessarily for publication.

HEBENON. — "Not unfrequently rendered 'Ebony'!" says Mr. Britten (p. 14 of No. 1 of this Magazine), with a note of exclamation. But *ebony* is the right rendering, and not merely the best, but the only possible rendering into the English language of the word *hebenon*, supposing this latter to be a *bona fide* word, and not a monster in classical form, corrupted by some transcriber or dictator from the commonplace English henbane. The word is Oriental (originally Semitic, I believe), being found in the Hebrew Bible (Ezekiel xxvii. 15.) as *habenim*, plural, according to Gesenius and De Wette, from the word being imported from foreign countries in the shape of planks, like our *deals*. It appears in the Greek as *hebelos* and *hebenos*, in the Latin as *hebenus* and *hebenum* or *hebenon*, and in the modern European languages as *ebony*, *ebene*, *ebano*, &c., &c., all which signify the black hard heart of the *Diospyros hebenum*, originally, as we learn from Virgil, to be found only in India.

"Sola India nigrum

Fert hebenum."

Though the modern languages have dropped the *h*, it found in the form of *heben* in our old English poets. So it appears reasonable and natural to interpret *hebenum* or *hebenon*, *ebony*. Mr. B. as I understand him, takes *hebenon* to be a mistake for *henbane*. But do the symptoms described by the poet agree in any one particular with those detailed in Mr. B.'s amusing little monastic fiction? Why not allow Shakspeare to make use of the

black, ill-smelling, deadly-looking, "cursed" tree as a poetical poison? On the other hand, only fancy the royal victim of this solemn tragedy, meeting his death by — *henbane*! Is it possible that he, of that more than mortal 'form and combination,'

Where every God did seem to set his seal,
To give the world assurance of a man —
could have been such a miserable chicken as to succumb to a small quantity of this contemptible bird-poison? I am under the impression that the *ebony* is the "tree of death" of the Persian paradise; but in consequence of the confused and indexless state of the German tomes, which are the authorities on Oriental archæology, cannot verify this.

E. J. P.

I THINK it is a fact worth knowing, that beech leaves are an excellent substitute for feathers in beds, and in this part, they may be gathered with little trouble and expense. Gathered about the fall, and somewhat before they are much frost-bitten, they form the best and easiest mattresses in the world, instead of straw; because, besides their tenderness and lying loosely together, they continue sweet for seven or eight years, long before which time straw becomes musty and hard.

BEECH LEAF.

"AN immaterial principle, similar to that which, by its excellence, places man so much above animals does exist unquestionably in the latter, and whether it be called soul, reason, or instinct, it presents in the

whole range of organized beings, a series of phenomena closely linked together, and upon it are based not only the higher manifestations of the mind, but the very permanence of the specific differences which characterise every organ. Most of the arguments of philosophy in favour of the immortality of man, apply equally to the permanency of this principle in other living beings."

PROFESSOR AGASSIZ.

"No one can doubt that the roots, as it were, of those great faculties which confer on man his immeasurable superiority above all other animate things, are traceable far down into the animate world. The dog, the cat, and the parrot, return love for our love, and hatred for our hatred. They are capable of shame and sorrow, and though they may have no logic nor conscious ratiocination, no one who has watched their ways can doubt that they possess that power of rational cerebration which evolves reasonable acts from the premises furnished by the senses—a process which takes fully as large a share as conscious reason in human activity."

PROFESSOR OWEN.

MOLES.—The *Cosmos* relates an interesting experiment, which proves the service rendered to agriculturists by moles, and the impolicy of destroying these little quadrupeds. In a commune of the Canton of Zurich, the municipal council were lately about to proceed to the selection of a molecatcher, when M. Weber, a distinguished naturalist, laid before the board the following facts. M. Weber had carefully examined the stomachs of fifteen moles caught in different localities, but failed to discover therein the slightest vestige of plants or of roots; whereas they were filled by the remains of earthworms. M. Weber, not satisfied by this fact, shut up several moles in a box containing sods of earth on which fresh grass was growing, and a smaller case of grubs and earthworms. In nine days two moles devoured 341 white worms, 193 earthworms, 25 caterpillars, and a mouse,

skin and bones, which had been enclosed when alive in the box. M. Weber next gave them raw meat, cut up in small pieces, mixed with vegetables; the moles ate the meat and left the plants. He next gave them nothing but vegetables; in 24 hours two moles died of starvation. Another naturalist calculated that two moles destroyed 20,000 white worms in a single year. These facts ought to convince farmers that to multiply the moles would be much better than to destroy them, and the earth they turn up enriches the land, so much so, that the produce is often doubled.

R. M. BOWEN.

FUNERAL OF A BEE.—A correspondent transmits the following:—"On Sunday morning last I had the pleasure of witnessing a most interesting ceremony, which I desire to record for the benefit of your readers; and if Dr. Cumming, the *Times*' beemaster, happens to be one of them, I would particularly commend it to his notice. Whilst walking with a friend in a garden near Falkirk, we observed two bees issuing from one of the hives, bearing betwixt them the body of a defunct comrade, with which they flew for a distance of ten yards. We followed them closely, and noted the care with which they selected a convenient hole at the side of the gravel walk—the tenderness with which they committed the body, head downwards, to the earth—and the solicitude with which they afterwards pushed against it two little stones, doubtless 'in memoriam.' Their task being ended, they paused for about a minute, perhaps to drop over the grave of their friend a sympathising tear, when they flew away, and, as John Bunyan says in his dream, 'I saw them no more.'"—*Glasgow Herald*.

THE HUMMING BIRD MOTH.—Is it not rather remarkable that the Humming Bird Hawk Moth has not yet appeared? After such a super-abundant supply of them last season, it seems strange that none are about now. They were out very late last year too. I saw one on Bledlow Ridge in November.

A YOUNG ENTOMOLOGIST.

MANY of the Lepidoptera appear in numbers only in some particular seasons, and the phenomenon is not at all satisfactorily accounted for yet. It is one of those many problems in Nature which continually remind us of the immense amount of labour yet necessary to discover an explanation of some of her commonest mysteries. The above moth has been seen in Wycombe once or twice this year. No doubt the continual wet weather last winter and this summer destroyed many of the pupæ. Ed.

HAWK MOTHS.—The caterpillars of some of the Hawk Moths have been very abundant this year; I have had about twenty of the Privet Hawk, eight of the Poplar, two of the Lime Hawk, and two of the Eyed Hawk. Many more have been found, but as far as I can discover, none of the Death's Head, which were so abundant last year. The boys call all these caterpillars "locusts," *because they have a horn on the tail*. I am unable to explain the logic involved. The larvæ of the Buff Tip Moth may now be found in colonies on the lime, beech, elm, and other trees.

HY. ULLYETT.

THE CHANTARELLE (*Cantharellus cibarius*). "What be yer a goin to do with they things?" said a son of the soil to me the other day. I had in my hand a basket of golden Chantarelles, to which allusion was thus unceremoniously made. "I am going to eat them," I replied. "To eat 'em! Why they're toadstools!" responded my friend: whereupon I gave him a short, and, I flattered myself, able account of the various edible fungi which surround us at this season. He listened—looked on me with evident pity—and then turned away in lofty contempt. A year ago, I should have been as unlikely to eat fungi from the woods as he—but *experientia docet*—and I am now an ardent admirer of Chantarelles from a culinary, as well as from an æsthetic point of view. Last Autumn, I sent a box of our wood-

land fungi to a friend in town, who is "well up" in such things. He returned me a rough sketch of one, to which he appended a short description, with the practical remark, "Eat it." This was the Chantarelle. Accordingly, I collected sufficient for a dressing, and, after they had been well washed and trimmed, had them stewed, with butter, pepper, and salt, after the manner of mushrooms, and served upon a slice of toast. On this occasion, they were stewed somewhat too rapidly; and the result might be briefly described as *tough*, and I was the only partaker of the dish. During the last month, however, three dishes of Chantarelles have appeared upon our breakfast table, and have been thoroughly appreciated by the family. Their flavour is similar to that of a mild mushroom. Those who feel inclined to taste for themselves, may find Chantarelles in almost every one of our Wycombe woods, from the latter end of August till the end of October or beginning of November. They are easily recognisable, being of a rich yellow colour all over; the stem is very thick, gradually expanding into the top, or *pileus*, which is funnel-shaped, and smooth, thus differing from the umbrella-form assumed by the mushroom, and many more of our common fungi. The gills are very thick, and look more like veins; and the whole plant is sometimes imbedded in leaves, the top only appearing. Chantarelles grow sometimes singly, and sometimes in patches; they have a peculiar scent, which is said to resemble that of apricots, though I confess myself unable to discover this likeness. A great deal more information regarding this and other edible fungi, may be found in a little illustrated book, price 6s., entitled "A Plain and Easy Account of British Fungi," written by Mr. M. C. Cooke, and published at 192, Piccadilly, to which I beg to refer my readers.

JAMES BRITTEN.

A November Ramble.

I BELIEVE it is a prevalent idea that in a late Autumn or Winter walk there is little or nothing to be found to interest or admire; this is a mistake, for there is no season of the year in which Dame Nature does not furnish us with some object of attraction. As a true lover of Nature, finding fresh beauties in every wood, lane, and hedgerow, I am anxious to make others participators in my pleasure, and will ask them to accompany me in imagination in a lovely ramble which I have this day enjoyed with a friend.

The neighbourhood of Wycombe abounds in charming walks of varied beauty,—hill, dale, and wood, forming scenery of no common order; and our ramble of to-day is by no means the least beautiful among them. Passing through West Wycombe and under the hill, where the bright sun shining on the velvet sward and rich old yew trees formed a picture of exquisite beauty, we ascended the long hill leading to Wheeler End. In the lane we noticed many tufts of the Male Fern (*Lastrea Filix-mas*), and the gnarled roots of many of the trees overhanging the road, “bearded with moss,” were decorated with the lovely golden-fruited Polypody (*Polypodium vulgare*); on the banks were the elegant Long-stalked Cranesbill (*Geranium columbinum*) and the Herb Robert (*G. Robertianum*) blossoming in great profusion, with here and there a root of the Soft Dovesfoot (*G. molle*). The Common at Wheeler End is fast losing all claim to the title, large portions of it being already enclosed; these encroachments on the ancient rights of the geese, donkeys, &c., are very painful to every lover of Nature, the commons being some of her richest treasures. The Furze (*Ulex europæus*) is here at all seasons more or less gaily in bloom. I was greatly amused on this Common in the Spring by the eccentric conduct of a pair of Blackcaps (*Curruca atricapilla*), which followed us the whole time, scolding in the most

emphatic manner, and constantly flying down close to our dogs, venturing almost to beat them with their tiny wings.

Wending our way homeward by a field path we passed a small farm, where I lingered awhile at the gate and watched the arrangements for the nightly comfort of the various animals, each appearing to be kindly cared for; even the donkey, usually so oppressed, was here unharnessed by loving little hands, and, with a gentle pat and a kiss, turned into the orchard to feed with those busy vegetarians, the geese—together forming a pretty and peaceful picture. Near the field path we found hosts of old friends still lingering on the sunny hillside in almost undiminished beauty, among them the three *Geraniums* before named; Buxbaum's Speedwell (*Veronica Buxbaumi*), with its large brilliant blue flowers; Field Scabious (*Knautia arvensis*); Shepherd's Needle (*Scandix Pecten-veneris*); Chicory (*Cichorium Intybus*); Wild Radish (*Raphanus Raphanistrum*); with a few plants of the pretty but troublesome Corn Crowfoot (*Ranunculus arvensis*). In a field of turnips we saw a fine plant of the Garden Marigold (*Calendula arvensis*) in full bloom. Many of the trees were wreathed with graceful climbing plants, the Black Bryony (*Tamus communis*), with its brilliant crimson berries, being most conspicuous. Our path in the woods lay through deep beds of leaves, the crisp rustling of which under our feet reminded me of the murmur of the sea upon a soft sandy shore; here we were frequently startled by a rabbit or other small animal springing up and bounding away over the leaves.

From Toweridge the path leads above West Wycombe Park, whence the view is remarkably pretty; passing near a wood where, in Spring, we find one of our sweetest and loveliest wild flowers, the Lily of the Valley (*Convallaria majalis*). Near Chapel Lane, into which our path leads, is a small triangular wood, almost surrounded by water, where the earliest Primroses (*Primula vulgaris*) are ever found. Thence our route led through a narrow lane, past Desborough and Copy Farm to Newland. This lane in Spring is full of floral treasures, and even now is bright with the varied hues of the Autumn leaves, red, purple, and rich golden

yellow, which, with the fruit of the Hawthorn (*Crataegus Oxyacantha*), and the light feathery seed of the Traveller's Joy (*Clematis Vitalba*), veil the departing year in a robe of beauty.

The sun having now disappeared, our observations were brought to a close; while the remainder of our walk was brightened by myriads of stars, so beautifully called by Longfellow, "the forget-me-nots of the angels."

E. C.

High Wycombe, Nov. 10, 1866.

Elizabeth Chandler

IN giving up discovery, one gives up one of the highest enjoyments of Natural History. There is a mysterious delight in the discovery of a new species, akin to that of seeing for the first time, in their native haunts, plants or animals of which one has till then only read. Some, surely, who read these pages have experienced that latter delight; and, though they might find it hard to define whence the pleasure arose, know well that it was a solid pleasure, the memory of which they would not give up for hard cash. Some, surely, can recollect, at their first sight of the Alpine Soldanella, the Rhododendron, or the Black Orchis, growing upon the edge of the eternal snow, a thrill of emotion not unmingled with awe; a sense that they were, as it were, brought face to face with the creatures of another world; that nature was independent of them, not merely they of her; that trees were not merely made to build their houses, or herbs to feed their cattle, as they looked on those wild gardens amid the wreaths of the untrodden snow, which had lifted their gay flowers to the sun year after year since the foundation of the world, taking no heed of man, and all the coil which he keeps in the valleys far beneath.—REV. C. KINGSLEY.—“*Glaucus.*”

“Might not the very admiration of Nature have been an act of worship,” continued LANCELOT. “How can we better glorify the worker than by delighting in his work?”—“*Yeast.*”—REV. C. KINGSLEY.

On Incredulity with respect to Geological Facts.*

THE parent of incredulity with regard to scientific truths is, in the majority of cases, ignorance. People refuse to believe a statement because the fact to which it refers is beyond the range of their experience, and they cannot understand how it is ascertained. The most commonly accepted doctrines of Geology were once rejected with an amount of contempt and even of pity, quite equal to that with which the ideas of Solomon de Caus and the Marquis of Worcester, concerning steam, were heard. To a certain extent this principle may be a good one; but when it extends to a resolute refusal to believe the statements of persons whose experience is much greater than our own, it becomes reprehensible. And for this reason, that anyone may, if he chooses to exercise the powers imparted to him, examine into these things for himself, and so become capable of judging about them: when he refuses to do this, in addition to refusing to believe, the very utmost we can do for him is to leave him in his wilful ignorance. What numbers of people there are who firmly believe the earth to be still in the same state in which it first came from the hands of the Creator; who laugh when you assert that the dry land upon which they stand was once covered by the sea; who smile in pity for you when you revive the tale of an old Atlantis, and say it is not at all improbable: they forget how our mighty rivers are constantly wearing down their banks, deepening their channels, and occasionally seeking fresh beds; how waterfalls grind down rocks; how ice and frost cause them to crumble away; how the restless dash of the sea wears away the shore, while in other places the mouths of rivers are filling up. You remind them of these, you refer them to a new island lately sprung up during an earthquake in mid ocean, to the action of volcanoes and floods of lava century after century—and you startle them; they begin to

* Read before the Society at the first Evening Meeting (October 9, 1866) of the Second Winter Session, 1866-7.

think they were wrong ; but still they make a dead stop at the fact that the Wycombe Valley, *e.g.*, was once at the bottom of the sea. You then take them to a chalk quarry, show them its nature, ask them how the fossils came there ? The general reply, when any thought is exercised at all, is, that the Deluge left them there ; and this, although a deception, is at least a point gained, for it makes them acknowledge that the Deluge wrought a change on the earth's surface. But what are we to say to a man who declares, in spite of all you tell him, that he does not believe these fossils ever were living animals, but that God created the quarry with them in their present state embedded in it ? Is he any better than unbelieving philosophers who referred them to an abortive attempt of Nature—a sort of trial of skill before she attempted to make the perfect being ? With such a person we *cannot argue*, since he does not inherit the ground which we ought to possess in common, on which to base our premises—I allude to the use of his senses in connection with his reflective faculties. Though the number of such people is decreasing it is still considerable ; and they are to be found mostly amongst those who make the greatest religious profession : they fancy that the Bible teaches them differently ; but ask them where, and they are lost ; they will not however yield their belief any the more for that. Few educated people, who have honestly looked at both sides of the question, would now affirm that the earth is scarcely 6000 years old,—I say *if they have looked at both sides*,—because there is a certain section of educated persons who *will not* look at the opposite side for fear it should prove to be the right one ; they will tell you that they have conscientiously examined one side and found it to be true, and they refuse on principle to examine the other. As these will not argue, they must go into the same class with the man who believes in the plastic attempts of the Creator.

I thought of taking just one or two of the common facts of Geology that are more or less appalling to such persons as those I have mentioned, and of showing the simple grounds on which they are to be received and believed.

As regards the explanation given by them of the appearance of fossil shells and skeletons—that they were so created—I would say very little in deference to the common sense of the true enquirers, since they would themselves demolish it. A skeleton found on the snowy sides of the Alps, or in a chasm at the foot of the Andes, is at once said to be that of some living being: if we find one embedded in stone, why may we not draw the same conclusion? In fact, not to be allowed to draw it, as I heard a friend say once, is to attribute to the Creator an intention to lead us astray by the right use of our faculties.

But I will take one of the very first assertions of Geology, the formation of our hills under water—the statement, for instance, that the hills on which we ramble were once under the sea—they were in fact constructed there—there was a period of time when they did not exist, although the other parts of the earth did. To the sceptic in Geology this is tantamount to denying the truth of the Bible—an *ideal* Bible, mind, not the one we commonly understand as the Bible. “What,” he says, “do you mean to say that the earth was formed piecemeal?—that these Wycombe hills were put here after the other part was finished? Absurd.” “Gently,” we reply, “don’t be so hasty in drawing conclusions; the hills were not *put* here; you do not understand the groundwork of the science; let us give you a few illustrations. Have you ever noticed the little channels by the side of the road after a heavy shower of rain? Have you seen how the sweep of the water has laid the sand in streaks, how the materials are assorted according to their gravity, the rubbish in one place, the heavier pebbles in another? Have you noticed how, where the action of the water was most violent, the bed of the channel is waved and ridged with regular layers of sand? Should you have any hesitation in ascribing all this to aqueous force, even if you were not informed that such was the case? And if you saw on the sand an impression resembling a bird’s foot, would you not say at once that a bird had walked over it? Now we find all these appearances in our geological excursions—we split open a slab of stone and find its surface in waves and ridges exactly like those we saw in the

channel; we look at another and it is crossed in two or three directions by tracks apparently of birds; but when we ascribe these to the same cause you disbelieve it—why? Why does the impression of a foot *on sand* signify that an animal has walked over it, while the same impression *on stone* signifies nothing? Well, the hardness of the material puzzles you. Now listen again. Suppose that your wayside channel, down which the rain sent a miniature torrent, was filled thereby with clay instead of sand—it is immaterial which, but we say clay to make the illustration more evident—and that the same impressions were made upon it, waves, ridges, hollows, footmarks; suppose that it remained undisturbed by any agency whatever, under a hot July sun for a week, the identical marks would still remain, though they are on a harder surface; is there any reason *now* to doubt their cause? What then if it lay undisturbed for many hundreds or thousands of years—or what if, when it was partially hardened, fresh layers of sand or clay were thrown down, and all the little hollows filled up, and then many ages elapsed and it was hardened into stone? Would it not easily split in the direction of the plane of all the markings, and exhibit those markings almost as distinctly as at first? You see clearly that the thing is not such an impossibility—that there is, at any rate, some probability in it. Look at this mass of shells I have brought from Lane End, it is almost as hard as iron; but when I took it from the ground it was soft clay, and would scarcely hold its own weight together; am I not warranted in concluding that these shells once contained animals? If they did, I know from the character of the shells, that they were marine animals; if so may I not conclude, either that they have been brought from the now distant sea and buried here, or that the sea itself was once here, and that here they lived and died? The former conclusion is too unlikely to be entertained for a moment. As regards our own chalk hills there is not much difficulty if the foregoing conclusions are accepted. Different rivers and seas carry away different kinds of mud or sediment with them, and, therefore, when it is deposited, different kinds of stone are formed; the sea washing the chalk cliffs of Dover,

carries away a very different burden to that washed by the Atlantic off the rocky coast of Ireland. As a more practical illustration we may point to the fact that a great deposition of chalk is now going on in the channels of the Bermudas, where the ship anchors come up covered with white lime mud."

Our friend is willing to allow now that there may be some foundation for what we advanced, and the next question probably will be, Might not all the shells found fossil have been left by the Deluge? We reply, No; and a very little consideration will show us this. We find fossils in every variety of situation, from the surface to depths of hundreds and thousands of feet. Now of course these shells were there *before* the enclosing substance—chalk or whatever else,—and if we find them at the bottom of chalk masses several hundred feet in depth, it follows that this thickness of chalk has been laid over them since. Is it at all probable that the forty days of aqueous tumult produced this? If so, how can we account for the alternate layers of flint and chalk? But the greatest objection is this. We find one particular class of fossils in our chalk hills, a totally different class in the oolitic hills of Gloucestershire, and another amongst the coal beds of Lancashire: how could the waters of the Deluge be so discriminating? How happens it that the different classes of animal remains are never confusedly mixed? And the chalk in England yields the same fossils as that in Europe—the coal of Lancashire and that of North America gives us the same—in fact each particular formation, in whatever part of the world it may be, yields its own peculiar class of fossil: this could not have been brought about by a chaotic flood, but by some agent, regular in its action, and obedient to certain laws. The same kind of reasoning will apply to the fact that the various formations are as regular in the order of superposition as the fossils; if the Flood brought them about, how is it that each occupies a certain determinate relative position—that the Lane End clay has never yet been found beneath chalk—that chalk always lies above green,—coal always below oolite and lias? I think that these questions are sufficient to show our wavering friend that he must give way a little.

Next, I may mention the geologic age of the earth. None of us would affirm, I presume, that this can be obtained from the Bible. "In the beginning" the heavens and earth were created—and that *beginning* may have been 6,000 or 6,000,000 years ago for what the Scriptures tell us. If you once allow that the hills were formed in the bed of the sea by sediment regularly and therefore *slowly* deposited, the idea of immense periods of time at once takes possession of the mind: we can, however, form no *definite* ideas of these, because we do not know the rate of deposition. Try to imagine how long one of our own hills—Keep Hill—would take in its formation: the white sediment dropping slowly to the bottom, year by year, as each animal died, and its shell sank and decayed, or was covered up: then think that the cretaceous formation in its greatest thickness has been set down at 1,200 feet—that the thickness of many formations beneath it is as great—that there have been several beds of clays and sands deposited over it many hundreds of feet in depth,—how many ages would thus be consumed? Recollect that the chalk mass itself is made up of animal remains, chiefly microscopic, whose tenants must have flourished *before* the chalk was formed into ranges of hills—must have belonged to *this earth* when peopled by different animals to those now roaming about—how long did they exist as a class? Omitting the Oolite, Lias, Trias, coming next in order under Cretaceous Rocks, let us notice the Coal Measures several thousand feet in thickness: they consist of beds of pure coal stratified between beds of clay and sandstone; the coal itself consists of vegetable matter; how long did the plants and trees flourish before they were embedded? how long did it take to form a bed of sandstone over them; how long for another period of vegetation? another bed of sandstone? a third and perhaps a fourth? The mind recoils from the calculation.

The Falls of Niagara are often appealed to as a proof of a greater age for the earth than that generally allowed. They are situated at the farther end of a gorge or passage seven miles long. The proofs are perfect that the Falls were once at the lower end of this gorge—that the river, falling over this ancient escarpment, by

degrees has worn for itself a channel 160 feet deep, backwards and backwards through the strata. Of course some parts of the strata were softer than others and were more quickly worn away, but Professor Huxley considers that a probable calculation shows that something like 10,000 years have been employed in forming the gorge.

Then there is an astronomical proof of the earth's age, which was brought forward by Mr. Lucas in a lecture he once gave in Wycombe, which I think very important. Let it be granted first that the earth and all the planets and stars were created at the same time. We learn this from the Bible ; and it is easy to see that the earth being a portion of the Solar System, that system could not exist as it is without it ; the insertion of the earth (had it not pre-existed) or the abstraction of it (now it does exist) would disturb the "harmony of the spheres." Similarly our Solar System is an integral portion of one vast assemblage of systems, the destruction of any one of which must bring about the destruction of the whole. All, then, were created at once. Now there are certain stars, or masses of stars, so distant that the light travelling from them takes 60,000 years to reach this earth : many people who do not know how this is found out refuse to believe it, but no student of astronomy or of trigonometry would disbelieve it. We *can* see these stars, their light *has* reached us ; *i.e.*, the rays of light now entering the eye through the telescope started from these stars 60,000 years ago ; therefore the stars were then in existence, and as the earth was also, the earth must be *at least* 60,000 years old. Grant this, and there is no limit *we* can put to its age.

Time prevents me taking up other points on which people are incredulous ; I trust, however, that sufficient has been said to show that geologists have sufficient grounds for at least the probability of their theories, however startling they may at first appear. Geology does not, and cannot, contradict the Bible when rightly studied ; the earth is just as much the work of God as the Bible ; both are occasionally misread, but that does not prove the study of either to be unlawful ; both tell the same wondrous tale

with respect to the display of His power ; but, as the study of the crust of the earth would never enlighten us with regard to spiritual truth, so no amount of biblical study will ever teach us Geology or Astronomy.

HY. ULLYETT.

Amongst the Grass.

WHEN Mr. H. C. Watson produced his invaluable work, "Cybele Britannica," he found it so difficult to procure positive information of the flora of some districts that, under the head of *Bellis perennis*, he enumerated several counties in which he had no evidence that even the common Daisy was to be found. If this was the case with flowering plants we must expect it to be even worse with such obscure organisms as fungi, indeed, in half the counties of Britain we do not *know* that the common mushroom or the corn-mildew is to be found. Buckinghamshire is one of the counties concerning the inferior flora of which we know almost nothing, and in the hopes of adding to our knowledge, I am about to give a short account of one small group of fungi, in the hope that it may lead some stray reader to hunt for them, identify them, and record how many belong to this county.

Amongst the grass in autumn the close observer of nature will not have overlooked some little white or yellow bodies, growing either singly or in tufts, and only conspicuous from the clearness of their white, or the brightness of their yellow colour. Commonly only from one to two inches in height and not thicker than a crow-quill, it may be expected that hundreds of people, even in Bucks, have walked over them, or sat down upon them, many a time and oft, and never noticed them. These belong to a genus of Fungi bearing the name of *Clavaria*, from the club-shape of many of its members ; and as we have upwards of thirty British species, it behoves us to write of them in some kind of order, and for that purpose, those which are more or less clavate or simple, shall occupy the first place. Indeed it is doubtful whether space will permit us on this occasion to enumerate the branched species at all.

SECTION I. SOLITARY.

First and foremost is the king of all our *Clavarias*, *C. pistillaris* (fig. 1.), if size constitutes any claim to kingly dignity; and having received from High Wycombe a native specimen of this somewhat rare species,* its right to a first place is indisputable.

Fig. 1.



In size this 'club' exceeds our figure, for it will attain a height of more than six inches, and a thickness of nearly an inch at the thickest part; externally it is smooth everywhere, and though at first of a tawny colour becomes browner by age. Internally it is white and fleshy. This and the four succeeding species always grow singly and distinct, and *not* in tufts, as those of our second group.

A very rare species (*C. Ardenia*) has been found in the southern counties, in which the clubs are much more slender and attenuated, always of a redder brown or rust colour, and with the clubs hollow.

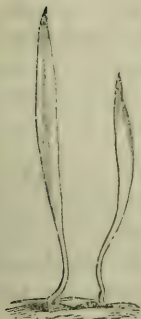
Almost equally rare is a twisted and contorted species (*C. contorta*), of a dirty white colour, which is occasionally found bursting through the bark of fallen branches. Indeed

both *C. Ardenia* and *C. contorta* differ from the majority of their fellows in selecting fallen branches on which to vegetate.

A smaller species (*C. juncea*), with slender thread-like hollow clubs is sometimes abundant in certain localities amongst dead leaves in woods. The stem is hollow, and at first pale externally, becoming ultimately of a reddish-brown.

* It was gathered in 1865 in Hearnston Wood, West Wycombe; and last year in the Booker Woods.—Ed.

Fig. 2.



A slender, delicate, little white *Clavaria* will often make its appearance on the soil in garden pots. This is *C. acuta* (fig. 2), usually the tops of the clubs are pointed, but occasionally they are somewhat blunt.

The fifth and last species of this group (*C. uncialis*) grows on the dead stems of umbelliferous plants, and bears some resemblance to the last, but is always blunt at the apex. Its general height is about an inch. The substance is white and tough, and not at all fragile, as in some species of the following group.

SECTION II. CÆSPITOSE.

In this section the clubs are still simple or unbranched, but they grow in tufts, which are more or less fused together or united at the base. These differ much in colour, for in one species it is purple, in another it is rose-coloured, in three it is yellow, in two it is clay-coloured, and in two it is white.

The purple species (*C. purpurea*) has elongated hollow clubs, and grows in pastures amongst grass. It is by no means common.

The rose-coloured species (*C. rosea*) also loves the grass, but is decidedly rare; the substance is brittle and the tips of the clubs become yellowish. I have never been fortunate enough to find either of these.

Fig. 3.



Of the three yellow species, *C. fusiformis* is common in woods.* It grows in rather dense tufts of delicate spindle-shaped clubs varying from one to two or three inches in height, which are ultimately hollow, the tips of the clubs are generally of a darker colour. The acute ends characterize this species. (Fig. 3.)

The second yellow species, *C. ceranoides*, also has the tips of a darker colour, but the clubs are unequal and not pointed, but

* Is frequent also on commons; Naphill Common, &c.—Ed.

often divided a little way down. It is difficult to determine the line which separates it from *C. fusiformis*.

The other species (*C. inæqualis*) is very variable in form, some of the clubs being simple and others forked, but none of them discoloured at the tips. Its substance is more brittle, and the clubs do not become hollow. It is not uncommon amongst grass, especially in woods.

Fig. 4.



Of the clay-coloured species *C. argillacea* is the largest, and the brittle clubs have a shining yellow stem; whereas *C. tenuipes* has inflated and wrinkled clubs (fig. 4.), and a very slender stem. Altogether the latter species scarcely exceeds an inch in height. Both are found on heaths.

Finally the two white species are *C. vermiculata* and *C. fragilis*. The first of these is very common on lawns and pastures and always white.* The clubs are cylindrical and rather attenuated at the tips, not exceeding three inches in length. They certainly resemble a tuft of fairy candles, and would make a very good stew if they were not so small. The clubs are never coloured or hollow, whereas in *C. fragilis*, the clubs are cylindrical and hollow, often yellowish, with a white stem, exceedingly fragile. Both are rather common, but the latter prefers meadows to upland pastures, and there is very little difference in their relative sizes. It would be difficult by means of woodcuts to give a distinct notion of the specific difference in some of these little plants, as so much depends upon the colour, but by the exercise of a little care and patience it may not be impossible to recognize them by the brief characters here given.

This chapter having already attained its limit, the branched species, belonging to this genus, must form the subject of a future communication.

M. C. COOKE.

* Gathered last autumn on Naphill Common.—ED.

Additions to the Wycombe Flora,—1866.

ALTHOUGH every branch of Natural History has ever something new to set before us, and although we can never exhaust the marvellous stores of information presented to us in each natural object, it is, of course, self-evident that just in proportion as we become more acquainted with any one subject, we have just so much the less to find out about it. In other words, to speak more particularly of our own district, each plant or insect that we find for the first time leaves one less for future discovery. The careful inventory which has been made during the last few years of the botanical productions of our woods and fields has left room for but few additions: and it is therefore with great pleasure that I record the discovery during the past season, of seven species of flowering plants hitherto unrecorded for the Wycombe district.

I may here remark that the area comprised in the district to the examination of which our Society is especially devoted is a radius of five miles from the parish church of High Wycombe,—this being the extent to which the labours of local naturalists are usually confined: and my forthcoming Flora of Wycombe will be arranged in accordance with this generally adopted plan. I will now briefly mention the seven species recently added to our list in the order of their discovery.

THE FIELD MOUSE-EAR CHICKWEED (*Cerastium arvense*) was duly recorded at page 25 of the Society's Magazine. It has not yet been observed in any other locality than that there mentioned, and we must consequently consider it, for the present, as merely a visitor to the district.

THE FINE-LEAVED HEATH (*Erica cinerea*). Although by no means a rare plant, had not been recorded among us until the 23rd of June last, when I had the pleasure of finding it in great plenty upon Wooburn Common. The same observations also apply to

THE TUFTED WATER SCORPION-GRASS (*Myosotis cæspitosa*), which grows in damp places and by the edges of ponds in the same locality, and has since been observed near Whittington Park. It is an insignificant little plant, with small blue flowers, and much resembles its relative, the Forget-me-not (*M. palustris*) in general appearance.

THE SLENDER TARE (*Vicia gracilis*), is a much rarer species than any of the following—indeed, it may be considered as the principal botanical discovery of the year. The sub-province of West Thames (comprising the counties Berks, Bucks, and Oxon) was not known to produce it, until it was discovered, on the 23rd of June, by Dr. Bowstead, growing in some plenty at the foot of the field side of the embankment, on the right hand side of the road, at the beginning of the ascent of White Hill, as you go to Beaconsfield. In general appearance it resembles the Hairy Tare (*V. hirsuta*), but the flowers are much larger and more conspicuous, of a delicate purplish blue.

THE ACRID LETTUCE (*Lactuca virosa*) I found growing very plentifully among the Furze on the gravelly embankment on the left-hand side of the road going up White Hill. It is a tall plant, with a thick stem, which has small but sharp thorns, and when broken, exudes a white milky juice; the flowers are yellow, resembling those of the Garden Lettuce.

THE COTTON THISTLE (*Onopordum Acanthium*). Two fine plants of this, the handsomest of our Thistles, were observed in a hedge adjoining the Ham Farm, near West Wycombe; they may, however, have originated in the adjoining garden.

THE LESSER DODDER (*Cuscuta Epithymum*). This pretty parasite was discovered on Wooburn Common by Miss Chandler, growing upon Furze and other plants; although a frequent species, it is not known to occur on any other of our commons.

In addition to this list of plants new to our district, it may be interesting to enumerate a few of the rarer species, already known to occur with us, for which additional localities have been discovered. The Woad (*Isatis tinctoria*), which was in 1865 noticed among the Saintfoin by the railway near the Bird-in-

Hand, was last year pretty plentiful, appearing at intervals between that place and Bradenham. The Annual Yellow Cress (*Nasturtium palustre*), an insignificant little plant, which has hitherto been noticed only at Lane End and Marlow, has been gathered near the Marsh Green: and the Hairy Rock Cress (*Arabis hirsuta*) has been found in Wycombe Park, and several other localities. The rare Coralwort (*Dentaria bulbifera*), has been noticed in the little wood at the foot of White Hill; and Mr. Marshall has traced it beyond our district as far as to Amersham. The Barberry (*Berberis vulgaris*) the claims of which to be regarded as a native of our district rested solely on the specimen on Keep Hill, has been observed sparingly in the neighbourhood of Marlow by the Rev. Bernard Smith. Wooburn Common, already mentioned as the locality of two or three new plants, produces the elegant Yellow Cow-wheat (*Melampyrum pratense*) in great abundance: the absence of this species from our neighbourhood generally was commented upon by Mr. Mill, in his list of Marlow plants published in 1850; and although Mr. Melvill noticed it in the Marlow vicinity in 1865, it was still almost unknown to the district. The lovely Bee Orchis (*Ophrys apifera*) has been gathered during the last season in Fennell's Wood, Loudwater, in a wood near Bradenham, and on a bank near White Hill: and the little Musk-scented Orchis (*Herminium Monorchis*) was abundant on Keep Hill. Many of the localities given in a list kindly supplied me by Mr. Gaviller have also been examined and verified. The Solomon's Seal (*Polygonatum multiflorum*) mentioned by Withering as growing "about High Wickham, Bucks," has not yet been noticed in our district; and we have been equally unfortunate with the Red Campion (*Lychnis diurna*), which, although included in Mr. Mill's Marlow list, has, at present, entirely escaped our observation, although Mr. Marshall gathered a single specimen on the road to Amersham about $5\frac{1}{2}$ miles from Wycombe. The Shepherd's Rod (*Dipsacus pilosus*) which it was feared would be destroyed by the clearing of the hedges in its only Wycombe locality, between Cressex Farm and Handy Cross, has apparently benefited thereby; having been finer and more abundant during

the past season than it ever was before. Last but by no means least in importance, the Mezereon (*Daphne Mezereum*) has been found this year both in Dane Garden Wood and in Fennell's Wood; and a specimen has also been observed in a previously unrecorded locality, namely, in the small wood at the foot of White Hill.

These are, I think, the principal additions to our knowledge of the plants of this neighbourhood which have to be recorded for the past season. If in themselves trifling, they are to a certain extent of importance as rendering more perfect the flora of a locality which, from the rarity of the species which it embraces, presents features of especial interest.*

JAMES BRITTEN.

* Read before the Society at the first Evening Meeting (October 9, 1866) of the Second Winter Session, 1866-7.

List of Wycombe Birds, No. 1.

FALCONIDÆ.

- SPARROW HAWK.....*Falco nisus* Not very common.
 KESTREL.....*F. tinnunculus* ..Plentiful; known as the
 Red Hawk and Little Hawk.

STRIGIDÆ.

- BARN OWL.....*Strix flammea* Common.
 BROWN OWL.....*S. aluco* „

LANIADÆ.

- RED-BACKED SHRIKE..*Lanius collurio*....Called Butcher-bird.

MUSCICAPIDÆ.

- FLYCATCHER.....*Muscicapa grisola*..Common.

MERULIDÆ.

- MISSIL THRUSH.....*Turdus viscivorus*..Tolerably plentiful.
 SONG THRUSH.....*T. musicus* Common.
 BLACKBIRD.....*T. merula* „
 FIELDFARE.....*T. pilaris*.....Called Felts and Pigeon
 Felts.
 REDWING.....*T. iliacus*.

HY. ULLYETT.

Proceedings of the Society.

SECOND WINTER SESSION 1866—7.

FIRST EVENING MEETING, OCT. 9.—This was held at the house of the President, and was very largely attended. Tea and coffee were provided at six o'clock; after which the business of the evening was opened by the President, who, in a short introductory address, alluded feelingly to the loss which the Society would sustain in the approaching departure of the Secretary. Mr. Ulyett, then read an interesting paper "On Incredulity with respect to Geological Facts," which will be found entire at p. 54 of the present number; after which he formally resigned his office as Honorary Secretary of the Society.

It was proposed by Mr. John Parker, jun., and seconded by Mr. E. J. Payne, that Mr. Britten be elected to the vacant post. This resolution was put to the meeting, and was carried unanimously.

A short paper, illustrated by specimens, on the additions to the Wycombe Flora during the past season, was then read by Mr. Britten: it will be found at p. 65. The objects exhibited, which were very numerous, were inspected; among them may be specially mentioned—casts of the eggs of the two gigantic extinct birds, the *Dinornis giganteus*, of New Zealand, and the *Aepyornis maximus*, of Madagascar; fossils from the Gault at Folkestone, including several Ammonites; some scarce fossil Crabs; and Kentish fossils from the Thanet sand, etc.: these were all lent by the President. Mr. Britten also exhibited several specimens of wild flowers in blossom, among which may be mentioned the Penny Royal (*Mentha pulegium*) from Naphill Common; the fruit of the Deadly Nightshade (*Atropa Belladonna*) from Hughenden; and the Fine-leaved Heath (*Erica cinerea*) from Wooburn Common. The meeting terminated with the usual votes of thanks.

SECOND EVENING MEETING, Nov. 13, held by kind permission at the house of Mr. John Parker, jun. A vacancy having occurred in the Committee by the removal of Mr. Britten to the post of Secretary, Dr. Bowstead was unanimously elected in his place. A paper on "British Reptiles," kindly forwarded by Mr. W. R. Tate, of London, was read by the Secretary. The orders *Sauria* and *Batrachia*, as illustrated by British examples, were selected for especial notice; and the remarks upon each species were gathered, in a great measure, from personal observation. The President then delivered an instructive address upon "Diatoms and Desmids," illustrated by diagrams and coloured drawings. The physiology of these minute vegetable organisms was explained; and the narrow line which separates them from the animal world was clearly and concisely drawn. Various Diatoms were exhibited under the microscope, as were also fossil specimens of their sporangia, from flint. Among the subjects exhibited was a collection of Butterflies, and another of Beetles (chiefly local), exhibited by the President, the former containing the only specimens of the rare Clouded Yellow (*Colias Edusa*) which have been taken in the Wycombe district. Various Reptiles, British and foreign, preserved in spirits, were also on the table; as also was a copy of Morris' "British Birds," lent by Dr. Bowstead; and a series of coloured engravings of Wild Flowers. The approaching Meteor-shower formed, as might be expected, the subject of much conversation; after which, the usual votes of thanks having been proposed and acceded to, the meeting broke up.

Useful Books.

IT has been suggested to us by a contributor that a small portion of our space might be profitably occupied by a list of useful books as may be usefully consulted by those who are desirous of increasing their knowledge of Natural History. We have great pleasure in acceding to this proposition: and have selected the following, which, while giving sound reliable information on the subjects of

which they treat, are free from technicalities which might puzzle the uninitiated.

The Animal Kingdom, as represented in Great Britain, is treated of in the world-famed "Natural History of Selborne," of which many editions are published; a very good one, copiously illustrated, and annotated by the Rev. J. G. Wood, may be obtained of Messrs. Routledge for 3s. 6d. The same publishers also issue some admirable books at the low price of 1s.: "The Common Objects of the Country," by the Rev. J. G. Wood, "British Birds' Eggs," and "British Butterflies," are all well illustrated; and the first named is most pleasingly written. Mr. Hardwicke publishes "British Reptiles," by Mr. M. C. Cooke; and "Slugs and Snails," by Mr. Ralph Tate; both are written in plain language, and the latter is a handy introduction to British Conchology: both are illustrated (4s. plain, 6s. coloured).

The Vegetable Kingdom is also well represented in the following works: "Wild Flowers of the Year," published at 1s. by the Religious Tract Society; "Flowers of the Field," by the Rev. C. A. Johns, a valuable introduction to the classification and description of British Plants, published by the S. P. C. K., illustrated, 7s.: "A Manual of Botanic Terms," by Mr. M. C. Cooke, fully illustrated, 2s. 6d., published by Hardwicke, as is also "A plain and easy Account of the British Fungi," by the same author, with coloured plates, price 6s.; while Messrs. Routledge supply "British Ferns" and "Our Woodlands, Heaths, and Hedges," for 1s. each, and "Wild Flowers" for 2s. All of these are fully illustrated: and the last-named contains a good explanation of botanical phraseology.

This list, at present very incomplete, would be more so did we omit to mention Hardwicke's "Science Gossip," with which many of our readers are doubtless already acquainted. It is admirably arranged and illustrated; and its price is but 4d. monthly. We hope to return to this subject on a future occasion, when works on other branches of Natural History will come under consideration; as well as some of a more advanced style than those above mentioned.

Correspondence.

All communications relating to advertisements, contributions, or the supply of this magazine, should be addressed to the Editor, care of Mr. Butler, High Wycombe. Contributions must be sent in before the 15th of the month preceding the date of publication. The Editor will be glad to receive notes concerning any of our local plants and animals, their times of appearing, their popular names and traditions, abnormal forms and colours, &c.; these must be authenticated by the writer's name and address, but not necessarily for publication.

HEBENON.—*Henbane v. Ebony*.—Although quite unable to equal the amount of learning displayed by Mr. Payne at p. 48, I still adhere to my opinion that by *hebenon*, Shakespeare most certainly intended *Henbane*. In this opinion I am supported by a great majority of Shakespearian commentators. But if the *Ebony* was indeed intended, we are forced to believe that our great poet did not know what he was talking about! Mr. Payne seems to think it almost impossible that a king could "succumb" to the action of *Henbane*, which he humorously terms "a contemptible bird-poison;" but assuredly it would be more unlikely that the juice of a tree, perfectly innocuous, in its effects, could in any way tend to such a result: and if we admit that kings are, after all, but ordinary flesh and blood—it seems to me that a monarch is as likely as a peasant to fall a victim to the effect of a poison. Again, *Henbane* produces different effects upon different people; and the symptoms given in my "amusing little monastic fiction" (which, however, rests on a solid basis of fact); although they may not exactly coincide with those of the poet, may be quite as correct as his. The 'rendering' to which I referred has been given, more than once, at a village penny reading: and I am quite willing to allow Mr. Payne to cite this as an authority, should he think fit. The conclusion to which we must come is briefly this: if Shakespeare knew

what he was talking about, nothing but *Henbane* could have been intended by him; but, if on the other hand, we allow that he was exercising his right of 'poetical license' in no ordinary degree, *Ebony*, or anything else, might have been selected for his purpose. I cannot help thinking that the former supposition will be most generally assented to.

JAMES BRITTEN.

THE LARGE TORTOISE-SHELL (*Vanessa Polychloros*). (See p. 45).—This fine butterfly is not unfrequent all round Marlow. It appears about the end of July, and almost immediately enters into its state of hybernation. For a few days only it may be observed in the sunshine, basking on the bole of some tree, and flying about it when disturbed. We only saw one last summer, and it was just outside a wood at Fingest. In April and early May it is more easily found, flying in the open walks of our woods; but the specimens are then worn and should not be captured, as they are laying the eggs of a future brood. I have taken the larva just ready to turn, on palings in this town, and the perfect insect appeared about a fortnight after. Although called by Harris in his "Aurelian" the "Nettle Butterfly," it is well known to feed on the elm, as stated by Mr. Ulyett. It is generally called "The Large Tortoiseshell," and is regarded as a prize among our young collectors.

REV. BERNARD SMITH, Great Marlow.

CURIOUS PLACE FOR A BIRD'S NEST.—One day in the spring of 1865, while at the Grove, Booker, I was requested by Mr. Morris to go into the garden and take down carefully a watering pot, which had been hanging to the branches of an apple tree all the winter; I removed it from the branch, and on looking into it, I saw the whole of the bottom covered with soft moss, in the middle of which was, sitting on its nest, a Tomtit (*Parus major*). Although the bird shewed some surprise at the sight of me, it did not fly away: I replaced the watering pot on the branch, when the bird suddenly started out and flew into a neighbouring tree. I looked again into the nest, which contained four little eggs. What astonished me most was the great quantity of moss which had been collected by the little bird for its nest, for the whole of the bottom of the watering-pot was covered two inches deep with the moss, which appeared loose, but was woven loosely with horsehair. The nest itself was more closely woven, and quite maintained its hollowed appearance thereby, being lined with hair and small feathers. The diameter of the watering-pot was about a foot, and it would have held more than a gallon of water. The good lady of the house was very kind to the little bird, and took a great interest in its welfare, and she told me that it afterwards hatched its young safely. The great quantity of moss was doubtless to absorb moisture, the bird being able to judge by some unknown power that no drainage could take place through such a dense substance as tin; otherwise it might have been saved much trouble and many journeys to and fro by simply building its nest in one corner. Does this exhibit *reason* or *instinct*?

R. M. BOWSTEAD, M.D.

THE GREEN WOODPECKER (*Picus viridis*).—This, the largest of the British Woodpeckers, is also one of the most beautiful of our British Birds. Any one who wanders through the wooded parts of Buckinghamshire may often detect it by

its jerky flight, and by the peculiar scream which it utters when alarmed. The rich green and yellow of the back, and the deep crimson of the back of the head, are equal in colouring to the plumage of the Kingfisher. It is a shy bird, but not uncommon, and is widely distributed. It is known by various provincial names, most of them indicating its habit of boring trees: "Woodspite," "High-hoe," "Hew-hole," "Pick-a-tree"—also in Northumberland, "Rain-fowl," from its habit of being noisy before rain. From the same cause, the old Romans called them *Pluvie Aves*. The local name in Bucks is *Wetile* (Witwall?). Old Christopher Merrett, in his valuable *Pinax Rerum Naturalium Britannicarum*, published 200 years ago, calls them "Witwoll," while Bewick gives this name to the Large Spotted Woodpecker (*P. major*). Is "Wetile" (of the spelling of which I am doubtful) a corruption of this word, or does it really indicate the character of the bird as the herald of rain? I find, too, that its local name here is *Hickall*. This is no doubt a corruption of Hickwall, but, according to Bewick, this is the name of the Lesser Spotted Woodpecker (*P. minor*). Perhaps some of your readers can tell me whether "Wetile" is the correct mode of spelling the name, and whether it is a corruption of "Witwall"?

T. MARSHALL.

EDIBLE FUNGI.—"I have this autumn myself witnessed whole hundredweights of rich, wholesome diet rotting under trees; woods teeming with food and not one hand to gather it; and this perhaps in the midst of potato-blight, poverty, and all manner of privations, and public prayers against imminent famine. I have, indeed, grieved when I have considered the straitened condition of the lower orders this year, to see pounds innumerable of extempore beefsteaks growing on our oaks in the shape of *Fistulina hepatica*; *Agaricus fusipes*, to pickle, in clusters under them; Puff-balls, which some of our friends have not inaptly com-

pared to sweetbread, for the rich delicacy of their unassisted flavour; *Hydna*, as good as oysters, which they somewhat resemble in taste; *Agaricus deliciosus*, reminding us of tender lamb kidney; the beautiful yellow Chantarelle, that *Kalon Kagathon* of diet, growing by the bushel, and no basket but our own to pick up a few specimens in our way; the sweet nutty *Boletus*, in vain calling himself *edulis*, where there was none to believe him; the dainty *Orcella*, the *Agaricus heterophyllus*, which tastes like the crawfish when grilled; the red and green species of *Agaricus* to cook in any way, and equally good in all."—*Dr. Badham's "Esculent Funguses of Great Britain."*

ANGLE SHADES MOTH.—I saw a good specimen of this moth (*Phlogophora meticulosa*) clinging to the land side of a large block of gault on the beach on November 30th. Was not this very late in the year for it? The day was very cold, and a high wind was blowing.

ENTOMOLOGICUS.

[It was rather late in the season, but they are generally out till the end of October.—ED.]

INSTINCT v. REASON.—A bee, which Huber watched while soldering the angles of a cell with propolis, detached a thread of this material, with which she entered the cell. Instinct would have taught her to separate it of the exact length required, but after applying it to the angle of the cell she found it too long, and cut off a portion so as to fit it for her purpose.

HY. ULLYETT.

SMALL ELEPHANT HAWKMOTH (*Charocampa porcellus*).—Three specimens of this beautiful little Hawkmoth were taken during the

past season at honeysuckle blossoms at Bradenham, by Mr. Kennedy.

"If we wish rural walks to do our children any good, we must give them a love for rural sights, an object in every walk; we must teach them to find wonder in every insect, sublimity in every hedgerow, the records of past worlds in every pebble, and boundless fertility upon the barren shore; and so, by teaching them to make full use of that limited sphere in which they now are, make them faithful in a few things, that they may be fit hereafter to be rulers over much."

REV. C. KINGSLEY.—"*Glaucus.*"

THE FUTURE LIFE OF ANIMALS.

—"Will the creature, will even the brute creation always remain in this deplorable condition? God forbid that we should affirm this, yea, or even entertain such a thought! While the whole creation groaneth together (whether men attend or not) their groans are not dispersed in idle air, but enter into the ears of Him that made them. While His creatures travail together in pain, He knoweth and is bringing them nearer and nearer to their birth, which shall be accomplished in its season. He seeth the earnest expectation wherewith the whole animated creation waiteth for that final manifestations of the sons of God: in which they themselves also shall be delivered (not by annihilation: annihilation is not deliverance) from the present bondage of corruption into a measure of the glorious liberty of the children of God. Nothing can be more express. Away with vulgar prejudices, and let the plain word of God take place. They shall be delivered from the bondage of corruption into glorious liberty: even a measure, according as they are capable, of the liberty of the children of God."

REV. JOHN WESLEY.

ERRATUM.—No. 2., p. 27, first line from the bottom, for "first" read "last."

Resources.

HAPPY the man who has some resources beyond the ordinary routine business employment of life. One-idea-people are never agreeable people, especially to those whose minds unfortunately are not bent at all in the course of the one idea. The *deliciæ* of entire change from the engrossing task of life are known so well to most intelligent men and women, that one can only compare such a change to the feeling of him whose life is spent in the fen country, where

"For leagues no other tree did mark
The level waste, the rounding gray,"

finding himself by the Lake of Lucerne on a clear summer day, the bright blue waters at his feet, and, rising from the Lake, the glorious green mountains, ridge above ridge, till his eye rests on the distant sparkling outline of the eternal snows. The colours of this simile may to some be too bright; I pray you, therefore, my friends, tone them down with your own brush and in harmony with your own fancy. This Magazine attests the resources of the Naturalist, the Microscopist, the Geologist, and the Antiquarian; and I will now venture to put in a word for my own humble resources. A reverence, though by no means a superstitious one for antiquity, and a love of architecture, have led me, in company with a kindred spirit, to find recreation in leisure hours in pleasant pedestrian trips, easy marches from this ancient town, to spots bearing familiar names, yet full of antiquarian interest. A fresh walk amid hill and valley in this Chiltern district, with good health and an object before you, who can describe such a combination of enjoyments? George Borrow would certainly well perform the task, did he from "Wild Wales" take his next walk through our county.

To recount the numerous objects of interest within compass in this neighbourhood would be beyond my purpose: I will only mention a few that at the moment strike me. There is the almost

deserted village of Fingest, its church tower rising up like a spectre in the valley; that Norman tower makes the lonely vale quite worthy of a visit. This pilgrimage should be taken first, then will be appreciated the better the rude grandeur of the tower of St. Alban's church, reared, not improbably, by the same hands that built the little tower of Fingest. Pray do not be offended, my reader, if in my simplicity I treat you as amongst the uninitiated in Architecture. Whilst on the Norman style, I might mention there is an interesting Norman doorway to the restored church of Bradenham; a delightful afternoon's walk is that across the high ground of Downley and Walter's Ash, down into the Bradenham Valley, and back to High Wycombe. Nothing however, can be finer in Norman work in this neighbourhood, than the pillars and arches that remain to attest the early foundation of the Hospital of St. John, now the Wycombe Royal Grammar School.

Then, next we have, here and there, interesting specimens of the early English style. A walk over Keep Hill to Little Marlow, would afford an opportunity to visit the village church; the north windows and the tower are well worthy of examination; in another direction, a walk to the secluded village of Little Missenden would reward the admirer of Early English work, there being at the east end of this church a triplet window with double plane of tracery; whilst, though beyond the limits of this locality, the beautiful tower of Haddenham church, with the arcading surrounding the belfry story, ought not to be left unnoticed.

It is by carefully examining these humbler details and by becoming acquainted with their distinctive beauties that we are able to realise the glories of the minster; that in visiting such churches as Lincoln, Salisbury, or Beverley,—those triumphs of Gothic in its purest and most lovely forms,—we do not take a mere bird's-eye view of the building, and content ourselves with a few empty exclamations, but we are at first sight overpowered with the vast work of art before us, specially in our earliest and happiest days of travel, and then we gradually acquaint ourselves with the entire design—the grandeur of the proportions to the exquisite finish of the sculpture.

I have been travelling very rapidly through the twelfth and thirteenth centuries in search of the art of those periods in our neighbourhood, and now arrive at the early part of the fourteenth century, in which the decorated style flourished; and there are some good examples of that style to visit within easy distance. Shottesbrooke church, beautifully situated amid the richly wooded country around Maidenhead, is a perfect specimen of decorated work; no busy perpendicular workman, nor, far more serious, untutored churchwarden has marred the design of its original architect; the spire is, I understand, being now rebuilt strictly in accordance with the first model. Burnham church, with its fine roof, and Hitcham church, are fair examples of the decorated period, and nearer home the manorial chapel at Widmer, near Marlow, now forming part of a farmhouse, and described in an interesting chapter of the *Records of Buckinghamshire* for 1865, by the late Rev. W. H. Kelke, has its east and south windows of the early fourteenth century period.

We now come to the last or perpendicular age. We have left behind us the graceful shafts, the pointed arch, and the high-pitched roof: great and grand were—if we only take York Minster as an example—the works of the perpendicular builders, and most industrious and popular builders they were; hardly any cathedral or parish church escaped their industrious hands, but we see in their designs the unmistakeable signs of the decline of Gothic art, and when they had chiselled the last pinnacle to Henry the Seventh's chapel at Westminster, its reign was over; the art itself died only to be revived in modern days. The nave, clerestory, and tower of our parish church, also the nave and transepts of Thame church, would be classed with this order; but as I have before hinted, there is scarcely any village church near us that does not present some specimens of this style. Grateful as we should be that the sacred buildings throughout the land have very generally been reverently preserved, it is to be lamented that—at least, in our own locality—so little is left us of the domestic art of the Middle Ages. No doubt many houses in the present day and in this ancient borough from their numberless mutilations disguise their antiquity; still we look in vain for the

ancient market house, the home of the Lord of the Manor, and of the inferior magnates, and find nothing but the peasant's cottage in unfrequented spots to remind us of the dwelling-places of our forefathers.

It is not by reading of the strifes and loves, the rise and fall of kings, that we can really become acquainted with the history of any period, but it is by seeing with our own eyes the monuments and memorials left us of the past that we can know the habits of thought of bygone generations ; as an instance with reference to the mere customs of a certain age, a recent examination of the beautiful tapestry work at Haddon Hall, Derbyshire, gave me more idea of how people amused themselves, how they dressed, in fact what *resources* they had, than the most elaborate description of volumes.

JOHN PARKER, JUNR.

High Wycombe.

The Pleasures of Moth Hunting.*

A LARGE white sheet, a dark lantern, a good stick, and a box of Calmar Tändstickor. Also a bottle of chloroform, some entomological "sugar," and pill boxes *ad infinitum*. Time about nine p.m. Thus equipped we start for Dane Garden Wood on a cloudy night in June or July. Did you say what for? Well, to catch moths, and possibly, a cold. Not a tempting occupation at such an hour you may think ; a snug room with a glass of something cheerful would be preferable. We will not argue the point ; suffice it to state that there are people ready to forego the latter for the chance of capturing something good between the hours of nine and three, when Morpheus reigns supreme over all, excepting entomologists. It is, perhaps, cold work for the first hour, but by the end of that time you begin to warm to your work, and as the "game" appears you are lost in the excitement of hunting. Up we go, over Keep Hill, stumbling over the juniper bushes, startled every now and then by a moth dashing

* Read before the Society at the Sixth Evening Meeting (March 5th, 1867), of the present Winter Session.

at our bull's eye, or vainly gazing after one that sailed across the gleams into the darkness like a winged ghost: we make frantic dashes at them with the net, but in vain: perhaps we catch one out of every thirty—ah! what is this? A Magpie; no, not a bird, not *Pica caudata*, but *Abraxas grossulariata*, which you must acknowledge to be a prettier name; a very common species, but we retain it because it is our first capture to-night. Forward; we do not want to wait on the hill, let us get to the wood at once. Here we are; how gloomy it looks at night. We think of the cosy little room we left, and the contrast is painful: yet we dare not return without accomplishing our errand, having been guilty of several vain boasts relative to what we should take home. On these tree trunks at the edge of the wood, and also on the old gate posts, we spread some of our liquid "sugar" to entice the moths that may come by. It gives out a rich odour (we speak as moths), and cannot fail to draw a host of gay young Nocturni. And leaving this for a time we seek an opening in the interior of the wood; here we suspend our sheet, with a lantern to throw a strong light on it. Light possesses a wonderful attraction for moths, and this mode is a favourite one with some entomologists. They (the moths, not the entomologists) settle on the white sheet and are pill-boxed. This again we may leave to itself for a time and go and seek our fortune with the net: ah! what a lot of great creatures come fluttering round us just in this one spot; we must see what they are: only the Yellow Underwing, *Triphena pronuba*; we really cannot spend time in catching them. *Pronuba* and *grossulariata* are two of the moth-hunter's greatest torments, they are *always* getting into the nets; if a curious looking moth rushes by you, it is sure to be one of them (if you catch it), and you get sold times innumerable. To return to our sugar—what luck? Here on the gate post we have two very fine cockroaches, and a slug; we did not certainly mix up our sweets for them. But here on the tree trunk we see some little sparkling beads throwing back the light; we know them, the eyes of moths are very beautiful by lantern-light, and the little beads show that there are moths there. Here is the Angle Shades, *Phlogophora meticulosa*, nothing rare, there are four of them here, but still it is very pretty; here

are also *Xylophasia polyodon*, *X. hepatica*, and yes, it is the lovely little Peach Blossom, *Thyatira batis*, but the shy creature was too quick for us, the gleam of the light soon drove it away. But look on the ground here at the foot of the tree—two Yellow Underwings, and one *Hepatica*, positively intoxicated, perfectly helpless. Oh, sight for a Temperance Society! Pick them up and preserve them as proofs of the fondness of moths for drink. The other tree trunks afford us a few choicer specimens, and now we wend our way to the sheet and lantern. Why, where can the spot be? Surely this is near where we left them: we wander up and down, round and round, finding ourselves continually coming back to the same place, but no sign of a sheet, no friendly ray to guide our wildered steps. Lost, lost in a wood at midnight, and we cannot tell which way to turn, or where to look for a path. How very horrible! And yet it makes one feel romantic, because you see there is no danger, only inconvenience; we can wander about till the morning, and then we are certain to find our way out; still we should prefer not to do this. Stay; a “happy thought” strikes me; let us make our way up to the highest ground, as straight as we can. What a relief, here is the way out. Now a fresh start, and by the aid of a better path we find our paraphernalia, but there is nothing on it, and as it is getting very early, we pack up, and start homewards.

Beating the hazel and hawthorn bushes as we go, we find dozens of night-feeding caterpillars, letting themselves down by a thread, spider-like, as we shake the branches, and crawling up again when they think the danger over. They are mostly *Geometridæ*, and by taking some home, and caging them, we may succeed in obtaining a moth or two that we do not often find in the perfect state.

These are some of the “Pleasures of Moth Hunting,” and many of our readers no doubt will say, queer pleasures they are. We have, however, only told of a ramble during a summer night; what would they say to an hour or two in a cold bleak night in March or April, such as we have spent looking over the shallows by the stream at the Marsh, and picking choice specimens of the Hebrew Character, *Teniocampa Gothica*, and others of the same

genus off their blossoms? Or how would you like to be out in a thick drizzling rain at 11.30 p.m. in October, throwing the gleams of your lamp on the ivy blossoms which then adorn the Park wall below the Rye, and detecting the little Chestnut Moths holding high festival? We have done this often, and one night took home forty specimens, comprising sixteen or seventeen species. We have them now in our cabinet, and as we look them over, each tells its own tale, forms in fact, a little volume in a large library, and it speaks to us most of friends that are gone, who shared with us the Pleasures of Moth Hunting.

HY. ULLYETT.

Branched Clavarias.

HAVING, in the last number, briefly characterised the British species of *Clavaria* which have the clubs simple and undivided, it will be expected of me that I render the account complete by an enumeration of the branched species. Nothing is so essential for a satisfactory determination of the larger fungi as good faithful figures. In the absence of these I must endeavour to make the distinctions as plain as I can.

If specimens of *Clavaria* are laid upon a piece of dull black paper over-night, in the morning the paper around the specimen will be found discoloured, frosted, or more or less sprinkled with the spores which the *Clavaria* has shed. These will either be quite white or yellow, brown, or some similar tint. The larger number of British species have white spores. Let us accept this as a distinction whereby to separate the branched species into two sections.

First, those which possess white spores, of which there are ten species; four of these are white, two yellow, two greyish or brown, one violet, and one whitish, with red tips. To commence with the largest group, the white species may be thus distinguished.

Clavaria coralloides and *Clavaria Kunzei* are both very much and repeatedly branched, so as to form a dense coralline tuft; but in the former the base or stem is thick, and in the latter slender. In the former the branches are unequal, and dilated in the upper portion; whilst in the latter the branches are equal and compressed at the axils. Both are found in woods, but *C. Kunzei* is very rare.

Both the above species are brittle, and both the following are tough. This may serve as a little guide in their discrimination. *Clavaria rugosa* (Fig. 1) is usually quite white, but sometimes of a dingy colour.

Fig. 1.



It has a character peculiarly its own, in its wrinkled surface, and in the clubs being nearly simple, often but slightly branched, enlarging upward, and occasionally more than four inches in length. Each club grows by itself, be it simple or forked; and the tips are always blunt and rounded. It grows in woods, amongst grass, or on shady banks.

Clavaria cristata, though often white, is quite as often of a dingy, dirty colour. The branches are less numerous than in the two species first named, and are flattened, spreading, with a crest-like appearance, being sharply notched at the apex. It is to be found in woods.

The more persistently dingy species are *Clavaria cinerea* and *Clavaria umbrina*. The first of these is of a greyish colour, very much divided and subdivided so as to form a dense tuft, proceeding from a short, thick, tough stem. The other species has a slender stem, is of a pale umber colour, only slightly branched, and is certainly rare, whilst *C. cinerea* is common in woods and on shady banks.

The yellow species are represented by *Clavaria fastigiata* and *Clavaria muscoides*, both of which occur in pastures. The first is very much branched, the branches are short, and again divided in a

digitate or clustered manner.* The last is less divided, slender, forked, and with the branches curved. It is the less common of the two.

The violet species is *Clavaria amethystina*. It is very brittle, variable in size, and much branched. We have no other species with which it can be confounded.

Clavaria botrytis has a thick fleshy stem, the upper portion divided into a number of swollen branches, which are red at the tips. It has been found in woods, but is very rare.

This ends the white spored species.

Those having coloured spores are eight in number. One of the rarest and most beautiful is *Clavaria crocea*, which is of a bright saffron yellow, small in size, slender with crowded branches, and has only been found in Somersetshire.

Clavaria grisea has a dirty white, thick stem, divided above into a few thick, blunt wrinkled branches, of a dingy grey colour. It is not at all a handsome or attractive species, and is rather uncommon. It may be known by its brownish spores from other species of a similar colour.

Fig. 2.



Clavaria abietina (fig. 2) has a very characteristic habit of its own, and is not uncommon under fir trees. It is of an ochrey colour, resembling Scotch snuff, very much branched and subdivided, but the branches and branchlets are all erect, giving the plant a very neat appearance. It sometimes turns green when bruised.

Another species possesses in a less degree this erect habit. It is *Clavaria stricta*, a species which has occurred in Buckinghamshire, found by Mr. Britten, and is not uncommon in gardens.† It is of a pallid yellowish colour, very much branched, turning brown when bruised.

* Extremely plentiful on our Commons during the late autumn; Naphill Common, &c.—ED.

† Occurred in great abundance in the autumn of 1865 on the earth surrounding an old sawpit in Hearnton Wood, West Wycombe; and in 1866 in the Hughenden Woods.—ED.

The yellowest of the *Clavariæ* in this group (with the exception of *C. crocea*) is *Clavaria aurea*, which has a thick pallid trunk, divided into stout forking branches. It occurs in woods, but is considered rare.

There are two ochraceous species still to be mentioned, both of which are uncommon: *Clavaria flaccida*, which is flaccid, as its name indicates, with a slender smooth trunk, and numerous converging branches; and *Clavaria crispula*, which is not at all flaccid, has a slender woolly trunk, and many spreading branches. The former occurs amongst moss in woods, and the latter at the base or in the hollows of trees.

The most recent addition to the list of British *Clavariæ* is *C. formosa*. It is a large thick stemmed species, divided into numerous long, thick, erect branches, each of which is again much subdivided at the apex. The colour is yellowish. It was found by C. E. Broome, Esq., near Bristol.

Uninteresting as this bare enumeration of species may be to the general reader, one feels some satisfaction in the hope that it may prove useful, and be the means of inducing those to look for Clavarias who never looked before, and those who always looked to look the more. Should only half a dozen *Clavariæ* not known at the present to flourish in this county be hereafter identified through the medium of these two chapters, *that* alone would recompense the writer for his little effort.

M. C. COOKE.

Does it not seem to you, that there must surely be many a thing worth looking at earnestly, and thinking over earnestly, in a world like this, about the making of the least part whereof God has employed ages and ages, further back than wisdom can guess or imagination picture, and upholds that least part every moment by laws and forces so complex and so wonderful, that science, when it tries to fathom them, can only learn how little it can learn?—REV. C. KINGSLEY.

—“*Glaucus*.”

The Chiltern Country.

(Continued from page 39.)

THE Chiltern Country is divided into parishes, most of which resemble very roughly the form of a square. Now the parishes in the lowlands adjoining the great roads on the North-West and South of the forest uniformly take a decidedly oblong shape, often run up into the hilly forest region, and sometimes take to themselves detached portions of land in the very thick of the forest. It is easy to see that these lowlands were at some time past thickly populated (comparatively speaking), and sufficient proof of this is contained in the unusually quick succession of old parish churches as we traverse either the Icknield Road or the old Bath Road. On the former, we find, at an average distance of about a mile apart, Ellesborough, Great Kimble, Little Kimble, Monks and Princes Risborough, the two Saundertons, Horsenden, Bledlow, Chinnor, Crowel, Aston, Lewknor, &c., and so on in the same proportion, till we arrive at the place where the Chiltern range crosses the Thames, at Goring. So along the old Bath road, we have Iver, Wexham, Stoke, Farnham, Burnham, Hitcham, and Taplow, then the Walthams, Shottesbrooke, and Ruscombe. All these villages being closely packed together, their corresponding parishes naturally take an elongated oblong shape, extending generally in this way at right angles on either side of the principal road, to an extreme length of perhaps six or seven miles, with a breadth of only a mile, or a mile and a half.

The Chiltern parishes are considerably larger than these, in consequence of the great area of unavailable woodland contained within their boundaries, and the absence of any important road to induce settlements. That they are of more recent formation than those adjoining, just mentioned, is seen from the numerous detached hamlets and patches of land within the forest, reputed to belong to, and still claimed by these lowland parishes: *e.g.*, the hamlet of Seer Green, belonging to Farnham, and the hamlet

of Coleshill, belonging to some manor in the adjoining county of Hertford: that of Ackhampstead, belonging to Lewknor, in the county of Oxford, &c., &c. These portions seem to have been occupied by a kind of colonisation, before the whole forest was thought worth entire occupation and regular division into parishes.

This division took place in or before the reign of Alfred the Great, whence all old English parochial names date. In some not exactly known year, in his time, the name each village or town then bore was distinctly ascertained, or a name given to it, if it had none, and its boundaries were fixed: and thus the first official survey of the island took place.

The names of the Chiltern parishes enable us to look for a moment with the eyes of our Saxon-German forefathers over our hills and vales. A list of these names, and a few remarks by way of explanation, may be both useful and interesting, especially as the subject has never before been systematically attempted. To ascertain the signification of the names, we must generally recur to some earlier spelling, in consequence of the corruptions produced by many centuries of tradition. Domesday Book, the oldest authority, is generally most correct in this particular, and the best guide to deciding the meanings.

AMERSHAM. The first name on our list presents a singular difficulty. Tracing it from the earliest, we find it successively called *Almondesham*, *Agmondesham*, *Amondsham*, *Amersham*, the two last being easily corrupted from either the first or second, one of which is evidently incorrect. Notwithstanding the authority of the spelling *Agmondesham*, which has been in use from the XIIIth century to the present time, though corrupted in pronunciation, I take the first, as being in Domesday Book; ALMOND'S HAM—THE PLACE OF THE ALMANN, Almand, or Almanian (*Lat.* Alemanni), *i.e.*, (1) a German or Germans of the Alemannic nation, as distinguished from the Saxons, Franks, Frisians, or (2) generally, a German or Germans as distinguished in the later times from the Danes of the adjoining parish of Chalfont. The word was constantly used in this second sense.* It is

* Schilter, Thesaurus Antiq. Teut. iii. 21.

originally derived from *alle manne*, i.e., all the men, the nation, and is found in the modern French words for Germany and the German, *Allemagne*, *Allemand*.

Agmondes-ham, though written during many years, was never in oral use, as is shown by the endorsement of one of the earliest documents (XIIIth century), in which it is spelt Amundesham, though Agmundesham is in the body of the deed. The *g* is probably an error altogether.

BEACONSFIELD. From the obvious *Beacon*—THE FIELD OF THE BEACON, a station on the ancient telegraph line which conveyed to the whole country the news of invasion and pillage.

BLEDLOW. Bledelow=BLOODY HILL; a relic of the battle fought there between the Christian Germans and heathen Danes is seen in the chalk cross on Bledlow Down, not far from the better known cross of Whiteleaf.

BRADENHAM. *Breda* or *brada* means a flat open place, derived from the old form of our word *broad*.

BURNHAM. VILLAGE BY THE BURN, or rather among the burns, or brooklets.

CHALFONT. This name is reducible to no Saxon elements known to me, and appears to be of Danish origin.

CHENIES. See Iselhampstead, hereafter.

CHESHAM, or properly CHESTER-HAM. The well-known word *chester* is the Saxonised Roman word for a town or military settlement, and points to the existence of such in the times of the Roman dominion.*

CHOLESBURY, properly CHELWALD'S-BURY, contains the name of its Saxon possessor.

DENHAM, properly DANE-HAM, was certainly a Danish settlement, and so named by the Saxon neighbours.

DORNEY, properly THORN-EX, signifying low uncultivated ground near a river. Very many places in low situations have this name; among others, it is the old name of the present site of Westminster Abbey and Palace.

ELLESBOROUGH. In a corrupted form, compounded with the

* Which is confirmed by the discovery of important Roman remains found here in the year 1864.

name of some Saxon possessor; probably the same name as Aylesbury.

ETON. Eton and Upton once evidently formed but one parish; a glance at the maps placed together will show this. For the sake of distinction, the little suburb which had grown up near the town of Windsor, was called Eton, or properly EY-TON, meaning TOWN BY WATER, and the original village UP-TON, or UPLAND TOWN.

FARNHAM. Here for the first time we have a genuine botanical name. Farnham is so called from the FERN which grows or once grew abundantly in its neighbourhood.

E. J. PAYNE.

(To be continued.)

On Fascination.

THE power of fascination, as possessed by certain animals, is very remarkable. We are all familiar with the stories which tell us how birds or small animals are fascinated by snakes: but it does not appear to be equally well-known that the same power is shared by other creatures, and those natives of our own country. As an illustration and in evidence of this fact, I will just narrate one or two circumstances which have occurred within my own sphere of observation.

In the winter of 1848, while spending my holidays with a school-fellow at a farm-house in Warwickshire, two hens were carried off by a Fox in a somewhat mysterious manner. They had been seen to go to roost the night before upon a long ladder, which lay across the beams of an open waggon-shed: and how Reynard could possibly have got to them, was a matter of conjecture. The next night, my companion and I stationed ourselves in a little outhouse attached to the shed, whence we could see all that passed inside, by means of a hole in the wall. At length our attention was arrested by a short snappish bark, fol-

lowed by a cackle among the poultry; and, looking through the hole in the wall, saw Reynard sitting with his head directed up to the fowls. My companion was very eager to shoot, but I advised him to wait until the Fox began to move off; when a hen fell suddenly down from the perch, and was instantly seized by her adversary. Before he could get away, the contents of the gun had finished his career. This incident leads me to believe that Foxes are, in this way, more destructive than poachers in pheasant-preserves.

Another case, somewhat allied to the foregoing, although perhaps exhibiting *reason* rather than *fascination*, I had an opportunity of observing, some three years ago, as I was walking by the side of a large wood and noted fox-cover. Looking through the hedge into a wide grassy ride I saw at a little distance a Rabbit feeding, when a Fox crept quietly out of the wood, and, perceiving the Rabbit, threw himself down on his back, with his legs in the air, and lay perfectly motionless. The Rabbit in turning round saw this strange object, and ran into the wood; but soon came out again, and sat up to take a better survey. Apparently satisfied with its observations, it came a little nearer and commenced to eat, but was again startled by a slight noise caused by the Fox having struck the ground with his tail. This seemed to excite the Rabbit's curiosity still further; it approached until within ten yards of Reynard, when the seemingly inanimate object suddenly came to life, and seizing the unfortunate Rabbit, which appeared too frightened to move, scampered off with his prey.

I have also reason to believe that the power of fascination is by no means confined to Snakes and Foxes, and the following circumstance tends to support this opinion. About five years ago, while driving along Chapel Lane, near West Wycombe, I heard a peculiar cry, and on arriving opposite the lane which leads to Copy Farm, I saw in the middle of the path a Water Wagtail (*Motacilla Yarrellii*), its wings drooping by its sides, uttering piercing shrieks, and apparently in an agony of fear. At the same time I became conscious of another sound, something between a grunt and a hum. On nearing the bird, which seemed

unable to move, I found that this proceeded from a Stoat, in the hedge-bottom, which had evidently fascinated the Wagtail, for as soon as I drove the Stoat away, the bird flew off, glad to be released from the power of its foe.

I trust that these few remarks may lead to farther correspondence upon this subject, which appears to me to be one of considerable interest to naturalists.

R. M. BOWSTEAD, M.D.

Wycombe Wild Flowers.

II.—OUR VIOLETS (*Violaceæ*).

ONCE more the season of spring is approaching; once more “the winter is past—the flowers appear on the earth; the time of the singing of birds is come;” and the naturalist, who has been eagerly watching each faint foreshadowing of the resurrection, as it were, of plants and insects, now begins to prepare for a full enjoyment of the daily-increasing beauties of Nature. Not that he is weak enough to believe in the “ethereal mildness,” with which the poet invested spring; he knows full well that cutting winds, and heavy rain, and chilly frosts make that season at the best a changeful one; but in spite of all these, there is a development in Nature which nothing can entirely check, and which each day brings a step nearer to perfection.

Among the avant-couriers of the floral train, the Violets claim a foremost place, and demand at least a passing notice as their right: we will, therefore, give a few moments to their inspection. We cannot here, as at Mentone, wander forth into valleys filled with double-blossomed Violets, where the air is literally laden with the fragrance they give forth; nevertheless, one of our own species is sufficiently sweet and lovely, and we value it none the less because we have to search for its blossoms among its beds of green leaves. We have in the neighbourhood of Wycombe, at

least five species of *Viola*. People generally recognise but three: the Sweet Violet, the Scentless, or Dog Violet, and the Pansy, or Heart's-ease. But in the second of these, we may readily discover three forms with distinguishing characteristics which can scarcely be overlooked if we exercise our powers of observation in an ordinary degree, and to these our remarks will be chiefly devoted.

THE SWEET VIOLET (*Viola odorata*) is so universally known and admired, that we will not insult our readers by attempting a description of it. We find it with white, pale blue, or purple flowers: and near Buckingham a variety occurred with deep claret-coloured blossoms: occasionally very pretty specimens are found, having white flowers striped with purple. It may be remarked, that in a wild state, the white Violets are usually much earlier than the purple ones: and about Wycombe both are equally common, although in some parts of the country a white Violet is accounted a rarity. Two points, however, connected with this species demand special attention, since it is by them that the Sweet Violet is distinguished from the next species, the Hairy Violet. If we pull up a root of *V. odorata* we shall notice that from its centre proceed one or more runners, which are technically, and without the slightest reference to Ritualism, called *stoles*; these stoles, at intervals, take root in the ground, and throw up leaves and flowers. In the Hairy Violet these stoles do not exist. Again, if we pluck a Sweet Violet, we shall notice that, *above* the middle of the flower-stalk, are two tiny light-green appendages, called *bracts*, which are really small leaves; in the Hairy Violet, these are situated *below* the middle of the flower-stalk.

THE HAIRY VIOLET (*Viola hirta*) is not uncommon upon our chalky banks; and—with the two following species—shares the name of Dog Violet, a name given, probably, in contemptuous allusion to its want of scent. In many respects, it resembles the Sweet Violet, from which it is distinguished by the aforementioned peculiarities. The leaves are hairy, and their undersides very pale green; in outline they are somewhat more triangular than those of *V. odorata*; the leaf-stalks are longer, and also very hairy; the flowers are of a paler blue than those of the

preceding. White-flowered varieties are of rare occurrence; and the blossoms, although occasionally slightly scented, are usually inodorous. In the immediate neighbourhood of Wycombe, this Violet is plentiful in Hollow Lane, and it appears to be frequent in other parts of the county where a chalky soil prevails: we have records of its occurrence at Hedgerly, Wendover, and Drayton-Beauchamp.

THE WOOD VIOLET (*Viola sylvatica*) is the most ornamental species which we possess. Differing widely from its predecessors in the smoothness and general appearance of its leaves, which are but slightly hairy, it far surpasses them in the size and brilliancy of its blossoms, which are, however, scentless. The two first-mentioned species have scarcely any stem—both flowers and leaves springing from the crown of the root: but in *V. sylvatica* we find a real stem, from which the flowering shoots branch off. Modern botanists divide the Wood Violet into two species: and it is chiefly with a view of ascertaining whether the second of them is found within our limits, that this paper has been written. We would therefore direct especial attention to the following brief description of the differences existing between the two forms: and also to the annexed figures, engraved, by Mr. Hardwicke's kind permission, from "English Botany."

Fig. 1.



1. *V. Riviniana*, Reich. (fig. 1.) This is our common scentless Violet, which, as on the terrace-walk at Hughenden, produces such splendid masses of rich, purple-blue flowers: it is common everywhere, in woods or on hedgebanks. The chief distinguishing mark between this and the next species lies in the black veins which streak

the lowermost petal: in *V. Riviniana* these are numerous, and uniformly branched at the base. In the other form,

2. *V. Reichenbachiana*, Bor. (fig. 2), which is not, as yet, known to occur in our county, the petals are somewhat longer, and much narrower; while the veins of the lowermost one are comparatively few, parallel, and scarcely, if at all, branched. This is a much less common form in England: but hopes are

Fig. 2.



entertained that by diligent search it may be detected in the county, if not in our own immediate neighbourhood. It may be remarked that Professor Babington describes the flowers of *V. Reichenbachiana* as "lilac;" while those of *V. Riviniana* are "blue." The aggregate species, *V. sylvatica*, is the Violet to which the name Dog Violet is most usually applied. A white-flowered variety was found near Wycombe last year by F. Wheeler, Esq., and is described at p. 16; but this form is of rare occurrence.

THE DOG VIOLET (*Viola canina*) is a somewhat puzzling species, and in very many respects resembles *V. sylvatica*. The flowers have less of the purple tinge than those of that species; and the spur is yellowish-white. The only form which I have seen in our district is *V. flavicornis*, Sm., which grows, or at any rate, used to grow, in great plenty on Wycombe Heath; I believe I have also noticed it on Keep Hill. In the *New Botanists' Guide*, it is stated to grow "near Hitcham, Dropmore, and Burnham Gore Lane," all in the county. It seems to prefer dry, open places, and is not very common. Professor Babington characterises *V. canina* as having the "primary and lateral stems flowering and lengthening;" while in *V. sylvatica* the flowering branches are "axillary from a short flowerless central rosette of leaves." Careful investigation will, in nearly all cases, render the seemingly slight differences between the Wood and the Dog Violet sufficiently apparent.

THE HEART'S-EASE OR PANSY (*Viola tricolor*) is the last of our Violets, and must be almost as familiar as the Sweet Violet to our readers. Its habit is, however, very different from that of the preceding species; and it also differs from them in being an annual: in short, were it not for the blossoms, we should hardly recognise the Heart's-ease as a true Violet. The flowers, in order to bear out the specific name, should be of three colours—purple, blue, and yellow, or blue, yellow, and white: but this form is comparatively rare with us, although occasionally to be met with in cornfields. The variety termed *V. arvensis* is the more common with us, in which the petals are small, and either yellow or white; but it is difficult to lay down any differences of sufficient

importance to distinguish it from the true *V. tricolor*, the one form passing almost imperceptibly into the other. The true *V. tricolor* is, however, a stouter plant than *V. arvensis*, and is often biennial, or even perennial: both flower from spring until very late autumn.

Thus we conclude our chapter on Violets. Much could be said on the various references made to them by the poets—their “old associations”—their properties, real and imaginary: but space for this is wanting. We may mention that we shall be very glad to receive specimens of either *V. sylvatica* or *V. canina* from any part of the county, in a fresh state, for examination: and should these few remarks lead to the discovery of *V. Reichenbachiana*, we shall, indeed, have our reward.

JAMES BRITTEN.

Proceedings of the Society.

THIRD EVENING MEETING, JAN. 15.—Held by kind permission, at the house of John Parker, Esq. Tea and coffee were, as usual, kindly provided, and there was a large attendance of members and friends. The President read a short paper, furnished by the Rev. W. H. Painter, on the remarkable cave at Brixham, Devon, which the writer had recently visited. The length of the cavern is estimated at 500 yards, while the height now averages 5ft. 10in.: in it were discovered bones of the Cave Bear, Hyena, and Rabbit, with a large antler of a Deer, and some flint knives. This paper was followed by one from Mr. Ulyett on “The Mammalia of High Wycombe.” This was read by the Secretary; in it our few wild animals were enumerated, and short descriptions of, and notes upon, the more interesting of them were given. After an interval for conversation, the President concluded his paper on Diatoms, which was illustrated by coloured diagrams; various natural substances were mentioned, into the composition of which these minute organisms enter very largely, as guano, &c. The objects exhibited were then inspected; the President, besides his ever-attractive microscope, had brought a collection of Land and Freshwater Shells, a collection of Spiders, a stuffed specimen of the Iguana, and several books. Miss Chandler exhibited a valuable collection of Madeira Ferns, and dried specimens of the local *Leguminosæ* and *Scrophulariaceæ*, which were much admired. A fine stuffed Stoat (*Mustela Erminea*) was shown by Dr. Bowstead, and

some curious Chinese Insects by the Secretary. The usual votes of thanks terminated the meeting at about 10 p.m.

FOURTH EVENING MEETING, FEB. 5.—Held by kind permission at the house of the late R. Wheeler, Esq. The principal feature of the evening was a paper (very kindly forwarded by the author, Robert Holland, Esq., of Mobberley, Cheshire), "On some Resemblances between Plants and Animals," of which the following is a short summary:—"The life of a plant is subject to a great many of the same changes as those which attend that of an animal. External circumstances affect it in the same way; *e.g.*, neither a fish nor a water plant can flourish out of their native element. Again, both animals and plants are similarly influenced by various poisonous substances: like animals, too, plants breathe, their leaves corresponding to the lungs of the former. Plants, as well as animals, grow by the accumulation of matter deposited from food, which food is drawn by the roots from the soil; or, when the plant first germinates, from the supply of sugar formed by the action of heat and moisture from the starch contained in the seed. Many plants seem to have, to a certain extent, the power of motion, the stamens and pistils of some changing their positions at various stages of their development. Most of our Orchids have, in a measure, the power of locomotion, the bulb dying away each year, and a new one forming at one side of it, so that the plant appears each year perhaps half an inch distant from the place where it last came up. The long winter sleep of plants is analogous to the sleep of animals, enabling them to start with fresh vigour when the genial spring sunshine calls them to life again. Plants mimic animals in their habits of life; we have solitary and gregarious animals, and we have solitary and gregarious plants. In the same way we have animal parasites, and we have vegetable parasites, closely resembling them in their method of obtaining food from their foster-parents: and as some members of the animal world perform the office of scavengers, by devouring or otherwise removing decaying matter, so do fungi convert such refuse into soil." The writer concluded by drawing attention to the Sundews and the Venus' Flytrap, as special examples of carnivorous vegetables. An interval for conversation ensued, after which the Secretary, in a brief paper, urged upon the members the necessity for more active work during the coming season, expressing a hope that the out-door meetings of the next summer session would be more largely attended than has hitherto been the case. An inspection of the objects exhibited succeeded: among which were the following:—A tray of Fossils, lent by E. Wheeler, Esq.; a collection of Minerals, by the President; the local species of *Geraniaceæ* and *Umbelliferæ*, by Miss Chandler; the Spurge Laurel (*Daphne Laureola*) and Shepherd's Needle (*Scandix Pecten-Veneris*) in blossom; and several illustrated works on various branches of Natural History. The President's microscope was, as usual, in requisition. Among the more interesting objects shown were—a section of

the nose of a mouse (injected), the web of a Spider, and a wing of the Burnet Moth (*Anthrocera Filipendula*); after which, the usual votes of thanks having been proposed, and cordially acceded to, the meeting terminated.

FIFTH EVENING MEETING, FEB. 26.—Held at the house of the President, at his kind invitation. This meeting was very largely attended, upwards of thirty members and friends being present. W. G. Smith, Esq., of London, had forwarded a paper, "On Toadstools," to the Secretary, which was read by him. The author dilated largely upon the pleasure and instruction derivable from a close study of the Fungus tribe, proceeding to explain the structure and development of various members of this marvellous class. The varied forms, odours, colours, and size of the different species was exemplified, and many of the edible Fungi were commented on in terms of high praise. Mr. Smith, however, judiciously warned his hearers against indiscriminate Fungus-eating, and concluded his paper with a detailed account of the alarming and well-nigh fatal results produced upon himself and his family, from the partaking of *Agaricus fertilis*, a poisonous species. The paper, which gave both instruction and amusement, was illustrated by a large sheet of engravings of the Edible Fungi, also by Mr. Smith; both will shortly be published by Mr. Hardwicke. The objects exhibited were very numerous: the President contributed various bones, among which were the skull and lower jaw of a young Indian Elephant, with teeth *in situ*; also two large teeth of a mature specimen; the upper jaw with long and perfect tusks, of the African Wart-Hog (*Phacochærus Æthiopicus*), a portion of the jaw of the common Boar, showing the long tusks; and a tooth of the fossil Elephant, or Mammoth (*Elephas primigenius*), found at Deptford. The Rev. W. Hunt Painter showed several trays of Fossils; some (among which were *Trigonia cordata*, *Ostrea conica*, and *Cyprinia angulata*), from the Upper Greensand, at Teignmouth, Devon; and others (including *Limneus longiscutus*, *Neritina concava*, and *Fusus labiatus*), from the chalk at Freshwater, Isle of Wight. Miss Chandler exhibited dried examples of the orders *Caryophyllaceæ* and *Compositæ*. A somewhat novel feature was the exhibition by the President, in small saucers, of various inhabitants of our streams, in a living state; including small Water Spiders (*Hydrachna*); Water Molluscs, comprising *Planorbis spirorbis*, *Physa fontinalis*, and *Paludina similis*; various species of Caddis worms (*Phryganidæ*), in their curious dwellings; the fresh-water *Oniscus*, an analogue to the common Woodlouse; and fresh-water Shrimps of large size, small specimens of which are very common in the wells of this town. Living specimens of the Green Hellebore (*Helleborus viridis*), Hairy Violet (*Viola hirta*), Cowslip (*Primula veris*), and other plants now in blossom, were brought by the Secretary. The Rev. W. H. Painter then gave a brief address, descriptive of his recent visit to the interesting caves in the Carboniferous Limestone in the vicinity

of Ingleborough, Yorkshire. One of these, Nethercoat Cave, is entered by a narrow doorway, whence a flight of steps leads into the cavern, a distance of 70 feet. The galleries have never been explored. A beautiful arch of limestone, and a waterfall of 70 feet, are among the more remarkable features; and in the neighbourhood of the cave are several chasms. In Clapham Cave the stalactites and stalagmites are of unusual beauty; in it is a large chamber 20 feet high. Bands of Bellerophons ("Rams'-horns") extend through the cave. The meeting concluded with the usual votes of thanks.

SIXTH EVENING MEETING, MARCH 5.—Held (by kind invitation) at the house of T. Wheeler, Esq. The first paper was by Mr. Ulyett, on "The Pleasures of Moth Hunting," which will be found at p. 78. This was followed by a Geological paper, by Evan Hopkins, Esq., which was read by T. Wheeler, Esq.; it will be published in the Transactions of the Victoria Institute, before which it was originally read. The author advocated a somewhat novel theory, viz., that the crust of the earth was moving bodily, although very gradually, in a northerly direction. In support of this, the existence of fossilised tropical trees in latitudes now northern, was adduced; and it was stated that the position of the earth with regard to certain fixed stars was known to have changed. These remarks gave rise to considerable discussion; and several members expressed their non-concurrence in the views of Mr. Hopkins. An inspection of the objects exhibited followed; among them were trays of fossils, lent by E. Wheeler, Esq., recent Elephant bones, from the Gaboon River, West Africa, by Dr. Bowstead; dried Wild Flowers, by Miss Chandler; Microscopic Objects, by the President; and some living Wild Flowers, by the Secretary, as well as the Bear's-foot (*Helleborus fœtidus*) which, however, is not truly wild in the district. The President then delivered a short address on "The Mouths of Insects," illustrated by diagrams and coloured drawings; various illustrations were afterwards shown with the aid of the microscope. The usual votes of thanks terminated the meeting.

THE finding of a new species is "rescuing, as it seems to you, one more thought of the divine mind from Hela, and the realms of the unknown, unclassified, uncomprehended. As it seems to you: though in reality it only seems so, in a world wherein not a sparrow falls to the ground unnoticed by our Father Who is in heaven. The truth is, the pleasure of finding a new species is too great; it is morally dangerous; for it brings with it the temptation to look on the thing found as your own possession, all but your own creation: to pride yourself on it as if God had not known it ages since; even to squabble jealously for the right of having it named after you, and of being recorded in the Transactions of I-know-not-what Society as its first discoverer:—as if all the angels in heaven had not been admiring it, long before you were born or thought of."—REV. C. KINGSLEY.—"*Glaucus*."

Correspondence.

HEBENON.—Mr. Britten has given no substantial answer to the objection raised against interpreting Hebenon=henbane. The question depends on the following points:—1. Shakespere, “knowing what he was about,” wrote and printed *hebenon*, a word possessing, as has been pointed out, a poetical and terrible significance, if not representing a practical agent from the poisoner’s pharmacopœia. The superstitious and fanciful contemporaries of the poet, throughout the civilised world, in those palmy days of poisoning, attributed deadly virtue to many an innocuous article, and numerous fictitious poisons, of which *acqua tofana* is a notorious instance, were the terror of the powerful and illustrious. The selection of whatever is obscure and repulsive in nature was the obvious work of the poet for the business of murder, necromancy, enchantment, &c., though the objects themselves, as in the case of the absurd pharmaca of the witches of Middleton and Shakespere, may for the most part be perfectly innocuous, or even medical in their nature. The supernatural, and that wild middle region between the supernatural and the physical, so often traversed by the poet, must not be tested by natural science: much less should the natural philosopher outrage the work of the poet to illustrate his discoveries, when the great poets afford plenty of legitimate examples of most accurate and constant observation of the lower forms of nature. 2. If the juice of henbane or of any English plant, poured into the human ear, were known actually to produce general cutaneous irritation and mortification, and to end by the death of the patient, the above would go for nothing. Unless this can be shown, the account of the poisoning must be admitted to be poetical, *i.e.*, fictitious: and in the absence of evidence we must assume this negative position, notwithstanding Mr. Britten’s profoundly scientific remark that the

plant “produces different effects upon different people.”

E. J. PAXNE.

HEDGEHOGS. — During a summer afternoon’s ramble last year, my attention was arrested by the barking of my dog in the midst of a thick plantation. I soon found that the cause was a Hedgehog, of rather a large size, which, having rolled itself up, bid defiance to its antagonist. I drove the dog off, took up the Hedgehog, and placing him in my pocket handkerchief, brought him home, and put him down in the shrubbery adjoining my kitchen garden, where I hoped he would be of some advantage in destroying slugs, beetles, worms, &c. In a few days I missed him: soon afterwards there was a report that a sitting hen had been disturbed, and her eggs scattered, some of which were hatched, and the young taken away for a few days nursing until the whole should come off. Some eggs never produced young, having been disturbed by (as it was supposed) a rat. The nest was a hundred yards from the garden. All that were likely having been hatched, the hen and her eight chickens were duly cooped in a small courtyard near the garden. Next morning the maid came in with a doleful countenance, “There’s been something and killed one of the chickens.” The dead body was examined; it had been mumbled and scratched about, but little eaten. All pronounced it must be a rat: so “George” was sent for, and the price of sixpence was placed on the head of the marauder. The following morning another, and one of the best chicks, was dead, and was much in the same state as the former. The ratcatcher was sent for, and the price raised to a shilling. “I’ll have him,” says “George;” “I’ll set more traps.” These were baited with the dead chicks. Next morning the real thief was caught,—it was my pet Hedgehog!

G.

On the Destruction of Birds.*

This is a subject which engages the increased attention of all naturalists, and a great deal has been written during the past few years to enlighten the public mind on the real influence which these small creatures have in maintaining the balance of creation; and assuredly it is a topic worthy of notice, the more so, that until lately the delusions of the public mind have been such that our common birds and other animals, instead of finding an admirer and protector in man, have had the greatest difficulty in holding their own, in consequence of the ruthless persecutions they have constantly met with and experienced. Now, I am not going to contend that small birds are unqualified friends of the farmer and the gardener: no doubt their services are, as our lamented friend, Artemus Ward, would say, "a little mixed;" but still I maintain that the observations of naturalists do show, when guided by reflection and intelligence, that the benefits which are worked out by small birds far outweigh the damage which they commit, and that they are on the whole necessary to maintain the balance of creation, and to keep under those smaller creatures which, without them, would soon become intolerable pests. Now, unfortunately, casual observers don't look very far ahead. They judge the value of God's gifts as they seem to them, and as they appear chiefly to affect their own immediate interests. They don't reflect fully on the nature and purpose of these, nor observe the daily life and habits of our common birds, and hence they quite under-estimate the value of them, and set them down at once as the enemies of the farmer, and the foes of the gardener. It is my object in the following observations to show that the popular and too common ideas on this subject are nothing more nor less than sheer delusions unfounded on fact, and unwarranted

* Read before the Society at the Seventh Evening Meeting (April 9th, 1867) of the Second Winter Session.

by observation. I don't seek to contend that in special instances considerable harm and damage may not be committed by small birds; but to show that the blind and indiscriminate destruction of them, as in the case of that wicked and stupid institution called a Sparrow Club, is based on nothing short of ignorance and total want of ordinary observation. The habit of decrying the value of these, God's creatures, is not, however, confined to the subscribers to Sparrow Clubs. The gardeners commonly believe their worst foes to be the Blackbirds, Thrushes, Sparrows, Finches, and Tomtits. The farmer commonly regards all creatures with wings, specially Rooks and Sparrows, as his bitter enemies; he shoots them, traps them, poisons them, makes scarecrows of them, and, in fact, does all he can to get rid of them. The gamekeeper goes to work in a more business-like manner—he kills everything, it does not matter what, "quite promiscuous;" everything to him is vermin (except perhaps foxes); Cats, Hawks, Owls, Stoats, Weasels, Polecats, Hedgehogs, Magpies, Jays, Squirrels, may all be seen exhibited in his museum—a strange medley—those that kill game, those that prey on the smaller vermin, all hanging together on the same rail. There is no discrimination, no classification, no reflection on the purposes for which these varied creatures are sent into the world; all are sacrificed for the sake of preserving tame pheasants which are nursed, and watched, and fed, till their natural instinct of self-preservation is nearly knocked out of them. As to the Hawks the gamekeeper scarcely ever troubles to distinguish between them; a Hawk is to him simply a Hawk—no distinction being made between the perfectly harmless and useful Kestrel, and the more powerful Sparrowhawk. The difficulty one always has in obtaining real and valuable information from gamekeepers and others, whose opportunities of studying the nature and character of the various species of wild birds are abundant, alone shows how little as a rule they value these creatures—shows indeed that they regard them simply as a nuisance, and an obstacle to the preservation of game. I heard a short time ago that in a part of Norfolk a Magpie had not been seen for 15 years; and I was informed at the same time that in a part of Surrey the Magpie is an "extinct bird."

There is, then, a ruthless and indiscriminate persecution carried on, and a constant war waged, against the *fera natura* of this island. Gamekeepers, gardeners, farmers, schoolboys, are all pitted against them; while it is sad to know that, among our countrymen generally, there is a strongly-rooted impression that all are foes to the farm and the garden. True, they say "It is pleasant to hear birds sing, and to see them flying about, and there is no doubt they destroy grubs and insects;" besides, "the Robins covered the children in the wood with leaves." But all these considerations weigh as nothing against the conviction of the great damage that they commit; and, therefore, they must be put down as foes to the farm and garden, not recognised as at all necessary, but only tolerated on account of their beauty and their song; the idea that they are at all essential to maintain the balance of creation, being one that scarcely enters the heads of half of even those who like and admire them. Now, we will take up the cudgels on behalf of our feathered friends, and first of all let us notice the Rook. That he does some harm there is no doubt, but who amongst us does not? If you were to shoot a Rook in March or April probably you might find in his crop a few grains of newly-sown spring corn; but shoot one every day in the year and examine his crop, as is recommended by our old friend Gilbert White, of Selborne, and you will see that although he does some amount of harm at times by devouring corn and turnips, yet that his food consists chiefly of grubs, wireworms, cockchafers, and other destructive insects. Indeed, any one possessed of ordinary observation can at once prove this. See an army of Rooks scattered over a large pasture field and working perseveringly with their bills; what are they searching for and devouring? The grubs of the cockchaffer, which are most destructive to pasture lands, and occasionally will quite destroy a garden lawn. You may often have noticed in the Rye the Rooks tearing up the turf, and doing apparently a great deal of damage; well, they are doing all this in their search for grubs, and specially the larvæ of the cockchaffer, which is, as I have said, very destructive both in its larval and perfect states. This was specially the case during the dry summers of 1858 and 1859;

when in places the Rye was for a time quite withered where these active birds had been tearing up the turf. The well known practice of Rooks following the plough, and devouring the grubs thrown up, is one which is noted by even the most casual observers. Often have we seen an army of hundreds of the members of the corvine family scattered over a park or pasture ground in winter for hours together, and reflected on the wonderful part performed by these birds in keeping within due bounds insect life of the most injurious kind. A well known popular writer thus refers to the destructive nature of the cockchaffer grubs. "Pursuing their destructive labours unseen, and never appearing above the surface of the ground until they take their adult form, these larvæ are more formidable enemies than even the slug, the snail, and the caterpillar, creatures which can be detected and destroyed by man. Neither human eye nor touch can discover the subterranean larvæ as they silently consume the very life of the plants on which they feed, cutting away the tender rootlets, and causing a blight, as it were, to fall on the herbage. Many an acre of grass, many a fine crop of vegetables has been blighted from no apparent cause; the plant ceases to grow, the leaves lose their fresh, healthy colour, they become limp and droop, the vivid green fades out of them, and changes to yellow, the edges crumple up, and the plant dies. There is no external sign of injury, and until the plant be uprooted, and search made below, no destroyer is visible; but in the earth, or entangled in the roots of the dying plant, will be found an inconspicuous, brownish, smooth-skinned, sharp-jawed grub, whose sleek condition shews the extent of its feeding, and whose trenchant teeth have eaten away the sources of life. Hidden, however, as they are from human view, they cannot conceal themselves from the senses of the Rook." So much for the Rook: at least to shew that he does a wondrous amount of good. I will leave his evil deeds to the discovery of his enemies, having every confidence that they will, in the course of their investigations, find that these are far outweighed by his good ones.

Let us next notice the House Sparrow. Our old friend, Gilbert White says—Chaffers are eaten by the Turkey, the Rook, and the

House Sparrow. Now, we all know that House Sparrows have been generally considered as embodying in their small persons all that is mischievous and destructive; and this is no doubt partly owing to the impudent conduct of the bird, and his great familiarity with man, and the abodes of man. He is always hopping about and chirping, making himself perfectly at home, whether in the farm yard, or in the dingy streets of London. His colour is altered by the atmosphere of the metropolis, but he is just the same chirping, cheeky creature everywhere. Can the Sparrow do any good? It seems, indeed, presumptuous, weighing the prejudices that have been instilled into our minds from our earliest youth, to say he can: but true it is, and it can easily be proved. People are so apt to look just beyond their own noses; and our gardener, because he sees a few peas pulled up, or seeds eaten, condemns the poor birds at once and destroys them ruthlessly. But, let him look beyond; let him watch the Sparrow all the year round, let him see him in the early morn pecking away at the insects on the grass, or devouring the grubs of the gooseberry fly, or swallowing the wireworm; let him only reflect on the enormous number of insects he must destroy in the course of the year, not only for his support, but to maintain his young ravenous brood. Let him examine the crop of a dead bird; let him do all this and even more, and then he must come to the conclusion that, of all the societies organised on the basis of ignorance and stupidity, that institution called a Sparrow Club is alike the most wicked and insensate, and calculated to effect results the very reverse of what is intended. In a township near Liverpool, great complaints were made of the small birds. Dead birds and eggs were liberally paid for; thousands of the latter were destroyed, the Sparrows were pretty nearly exterminated, and a plague of grubs and caterpillars was the result. A correspondent of the Rev. J. G. Wood writes that he found in the crop of a Sparrow that was shot as it was coming from his fruit trees, 20 green caterpillars and a number of aphides. Instances can be multiplied. In the *Field* newspaper of a late date it is recorded by a correspondent at Melbourne, in Victoria, that the grounds of the Acclimatisation Society were ridded of a

plague of caterpillars by the Sparrows and small birds which had been introduced from this country. What do the Sparrow Clubs say to this? In one instance the annual meeting of a Sparrow Club recorded the destruction of 7000 small birds in one year in one locality, and it is calculated that these birds would have destroyed 20 millions of grubs, caterpillars, and insects, during the breeding season. Mr. Wood remarks on the ignorance and inconceivable folly which dictates these bird murders; and he suggests that it would be quite as rational a proceeding to give prizes for smut in wheat, for diseased potatoes, the most fly-devoured turnips, or the most wireworm-blighted corn.

Now, no one would be disposed to contend that the Sparrow does no harm; but that he is judged too much for the harm he does, and gets little credit for the immense services he renders, it requires but a small amount of observation to discern. Watch him feeding his young, and you will soon find out that caterpillars and insects are their staple food; and this process, mark you, goes on for hour after hour; each pair of birds working in its own beat, and ridding gardens and orchards of insect pests, in a way that it is useless for man to emulate. I cannot dwell longer on the daily walk of the Sparrow—I have selected him because he is generally in bad odour, because he is too generally regarded as a very desperate character, and as the embodiment of all that is useless and destructive. Now if it has been, or can be, shown that he is really a most useful creature, and that his services to man are most important, then I can fairly ask for a merciful consideration of the claims of our other English birds to our protection, and a fairer estimate than is usually given of the great and wonderful part they are all acting in maintaining the balance of creation. True,—there is nothing of unmixed good; each small bird does its share of good and harm, the former, I believe much counterbalancing the latter; it does it quietly and unostentatiously; unfortunately, the bad only is usually noticed, and hence the persecutions small birds are subjected to; but reflection on the purpose of these small creatures, aided by close observation of their daily habits, will soon dispel the prevailing impression that they do nought but harm. At Walton Hall, the

abode of the late Charles Waterton, not a bird was destroyed, nor a nest taken, and the result was, not that his gardens were laid waste, but that his crops were plentiful and abundant. Mr. Ellis, of Leicester, writes thus to the Rev. F. O. Morris, in January, 1864:—"At Walton Hall the co-existence of many birds of prey with game and wild fowl is remarkable. When last spring at Mr. Waterton's, the Lapwing was in friendly intercourse with the Carrion Crow, while Magpies and Hawks were close at hand. The presence, too, of a great number of Herons does not prevent the lake from supplying plenty of fish." Again he writes:—"This summer we have had two broods of the White Owl in the midst of a game preserve; in the f lining their habitation, and in which they nightly search f , the coverts of Partridges were full and undisturbed." On the other hand the destruction of the smaller birds has proved in its results this: that if man attempts to regulate the operation of creation after his own fashion, he must certainly make a mess of it. At the present day this is the case in France, where the dearth of small birds is severely felt. The colonists of Australia and New Zealand are wiser in their generation; for they are doing all they can to import the small birds from England, and large numbers are now taken out by returning colonists. I heard an instance some time ago where a settler at Canterbury, in New Zealand, took back with him a number of Blackbirds and Thrushes; and in the garden of the Victoria Acclimatisation Society, Sparrows, Rooks, Thrushes, Yellow Ammers, Blackbirds, Finches, &c., have been set at liberty. It seems strange that the colonists value these small creatures, and that we fail to do so generally in England. Even the little Titmouse, when it appears to be destroying the buds of trees, is really feeding on the insects within them. It has been calculated that in the breeding season this small bird destroys some 500 of insects and caterpillars daily. I will not now stop to allude to our other English garden birds in detail; the Starling, Blackbird, Thrush,—the first an especially useful bird; the two latter simply atoning by the beauty of their song for any damage they may commit in fruit gardens for a short

period of the year. I trust that in future better and truer ideas may prevail; that the Hawks and Owls, the Jays, Magpies, and other trophies may no longer *disgrace* the gamekeeper's rail—that the value of our English birds will be taught in every school in the country, and birds nesting discountenanced to the fullest extent. It is chiefly amongst the young that we must look for the reception of more rational views on this important subject. A change is, however, I am glad to say, taking place in the popular mind, an increased interest is being shown, and more enlightened views are being entertained. We have, then, good hope that this will continue, and that the time is not far distant when a Sparrow Club will be unknown, and the Gamekeeper's Museum a thing of the past.

THOS. MARSHALL.

Clerks of the Weather.

“**I**S it going to be a fine day?” is a question which, at this season of out-door enjoyment, is frequently upon our lips. If we have made arrangements for a pic-nic, or for a no less enjoyable ramble in search of wild flowers or insects, it is, to say the least of it, unsatisfactory, when our first morning peep out of window is met by a dull sky or a heavy bank of clouds. If it rained we should feel disappointed; but the uncertainty is even more trying. Now, in such cases, we doubtless feel how useful would be the information obtainable from the Clerk of the Weather Office, did that functionary exist; but as that source of weather-knowledge is denied to us, we must look around and see if Nature, the truest Lady Bountiful extant, has not in some measure supplied the deficiency. As usual, we find provided for us the very things we require: and these little black imps, sluggish though they seem now, are Clerks of the Weather in good sooth, known though they be by the less dignified name of Leeches.

Now, having given our Leeches an important designation, we must endeavour to show that they deserve it; and this we must do on the principle recommended by Ingoldsby, "*Crede experto—trust one who has tried.*" An esteemed correspondent having submitted to us the following facts, all recorded by herself during five years' careful observation, we gladly publish them for the benefit of those to whom the query, with which this article commences, frequently occurs:—

The apparatus necessary for the purpose is very simple: it consists of a glass jar, holding a pint and a half of water, with stones and a shell or two at the bottom, and a few sprays of *Anacharis*; the water must not reach the top of the vessel by at least two inches. A tight-fitting wirework cover must be placed over the top, as the Leeches soon escape, especially in stormy weather. The water should be changed once in ten days during the summer; and once in three weeks during the winter.

As a rule, during fine and wet weather, the Leeches remain at the bottom of the vessel. When a change is *slowly* approaching they move upwards, twenty-four hours, or, at times, thirty-six hours in advance of it. When a storm is *rapidly* approaching, the Leeches become very restless, and rise quickly; while before a thunder-storm they pass *entirely* out of the water. When the change occurs, they become still, at the bottom of the vessel; but if, under such circumstances, they rise again or keep above the water, length or violence of storm is indicated.

If the Leeches rise during a continuance of east wind, wind rather than rain is to be expected. When a storm comes *direct* from a distance, we shall observe the rapid rising and restlessness alluded to above, but much shorter notice—from four to six hours—will be given. When heavy rain or high wind is to be expected, the Leeches are also restless and keep out of the water, but their movements are much less rapid.

It is advisable to keep the vessel in a temperature as even as possible. When the temperature falls below 48°, the Leeches cease to indicate any change; they become quite torpid, or, in other words, hybernate *pro tem*. In a small jar at a temperature

above 75°, the excessive heat *may* cause them to rise; otherwise they would be quiet.

We must bear in mind that, should the Leeches *seem* to indicate wrongly, the mistake does not lie in their indication, but in our observation, or mode of interpretation of the same. Nature cannot err; and all mistakes are ours, not hers: so where ~~we~~ we find apparent contradictions, we must humbly believe that *we* are in the wrong.

To insure certainty of observation, it is advisable to follow the plan annexed, of keeping a daily record of the doings of the Leeches, and of the state of the weather. After a time this will not be so essential; as careful observation will enable us at once to determine what weather is indicated. We shall then be able readily to answer the oft-repeated question, "What is the weather going to be?" for the Clerks of the Weather Office will never fail to supply us with an answer.

TABLE SHOWING OBSERVATIONS FOR A WEEK.

1867	HOOR.	LEECHES.	WEATHER.	WIND.	DESCRIP- TION.	OBSER- VATIONS.
Apl. 9	10 a.m.	} Two nearly at top. At bottom.	Fine; cumuli.	NW.	Fresh.	Storm from SW. lasted 20 min.
	7 p.m.		Thunderstorm.	N.NW.	Stormy.	
10	11 a.m.	At bottom.	Fine; cloudshigh.	W.NW.	Calm.	
	6 p.m.	..	..	..	..	
11	10 a.m.	At bottom.	Fine; cumuli.	NW.	Moderate.	
	7 p.m.	..	..	..	..	
12	11 a.m.	} Half way up in water. Nearly at top.	Fair; clouds high.	W.NW.	Calm.	
	4 p.m.		..	..	..	
13	12 p.m.	} Two out of water. ..	Heavy rain.	SW.	Fresh.	
	6 p.m.		Fine rain.	..	Moderate.	
14	10 a.m.	At bottom.	Heavy rain.	SW.	Gale.	
	6 p.m.	} Nearly out of water	Fine.	..	Half-gale.	
15	12 p.m.	} One out of water. At bottom.	Heavy showers.	SW.	Squally.	
	10 p.m.		Fine; clouds low	..	Moderate.	

ELIZABETH WOOLLAMS.

Instinct v. Reason.

IT is said that animals have Reason; and a question has been raised by one of our correspondents as to whether we attribute to Reason or Instinct the method by which animals and birds provide for their own safety and the comfort of their offspring. Now, in the first place, before we determine any proposition, and make known to the world an opinion somewhat new or contrary to generally received notions, we should be certain that the terms and words we make use of to express that opinion are understood by our readers in the same sense that we intend them. If there is doubt about the meaning of any word we employ, we should give a definition of it and state the sense in which we employ it. Words have so many significations, they convey to minds so many different ideas, according to the general or particular way in which they are intended, that we cannot be too particular in the words we select to express our notions, to define clearly and distinctly the sense in which we take them. Mathematicians in general, when the least doubt arises as to the sense in which they intend a term to be understood, give the meaning which they themselves put upon it, which is no doubt the cause why they differ so little in their general propositions. Theologians and their disputants, on the contrary, give no definition of the words they use in their arguments, which consequently leads to endless controversy. Let us see then in what way we understand the word Reason, and determine if we all receive the sense and meaning alike. Philosophers, great writers, and custom have made a distinction between Reason and Instinct; and that distinction is, as we have been taught, the difference between the human mind and that of the animal. Reason, I believe, as generally understood, is the action of the mind upon knowledge; that knowledge, received through the sense of sight, hearing, &c., is said to know the difference, or relations, between cause and effect, and it is that which regulates our general actions. If the

mind were constantly to yield to external impulses and its current of ideas, without this particular quality called Reason to regulate our action and moral conduct as rational and immortal beings, we should be no better than the animals themselves. Now, if we understand Reason in this light, which I believe is the proper meaning, I do not see how, or in what way, we can say that animals are possessed of Reason. It is true that animals perform operations in various ways, which to us appear wonderful, inducing us to believe that they must have some forethought or knowledge of cause and effect; as, for example, the bird builds its nest with every degree of care and comfort for its young; at least, some birds, not all, for the Wood-Pigeon, Peewit, Partridge, and some others, scarcely make any nest at all. Then take the Bee, which constructs its honey-comb on the highest mathematical principles: the Ants—cut into one of *their* small hillocks and see the extraordinary and beautiful manner in which it is arranged both for a summer and a winter habitation: the Spider—look at the subtilty with which it weaves its web; and a thousand others equally marvellous: and yet we cannot say that they have any knowledge of what they are doing; if they had, we may, to employ our reason, ask why they should not all alike use the same care for their young? Hares make little or no nest; Rabbits, *au contraire*, burrow deep into the ground, and exercise the greatest care for the warmth and protection of their young. Again, if we say they have knowledge of what they are doing, why, we may ask, do they not make their nests in the best position to be found in the locality in which they are placed, and not in the most exposed and dangerous places, which is very frequently the case? Again, if animals are possessed of Reason, and are conscious of what they are doing, why is not man himself possessed of Reason without tuition? I think it will not be denied, that if man were not educated, taught, and brought up amongst rational beings, he would not be considered a rational being himself; and would, as I have before stated, be little better than the animal in actions and moral conduct. We can, therefore, only attribute this mode of operation in the animal to a particular faculty, or innate quality, which we call Instinct; for it is quite clear that they are

unconscious instruments of what they perform, or that it is an innate quality given them by the great Creator for the propagation of their several species, their self-protection, and for the use of man. I conclude then that Reason is one of those faculties which relate to knowledge, as I have said, and therefore it is a mistake in the meaning or sense of the word when we differ in our opinion as to animals being possessed of Reason. It is very clear that the mind, to reason well, must be in possession of some previous knowledge, and reasons from that knowledge comparing ideas and notions. Can we, then, say that the little bird reasons from a previous knowledge when it builds its nest, when we know for certain that it had never seen a nest so constructed?

NELLIE ATTY.

Wycombe Butterflies.

II.—OUR ARGYNNIDÆ (*Fritillaries*).

THE colouring of these butterflies, though not so gorgeous as that of the *Vanessidæ*, is yet very rich in tone, and the sight of any of them on the wing will always incite the young naturalist to attempt a capture. They derive their common name from the fact of their resembling the flowers of *Fritillaria Meleagris*, both butterfly and blossom having the surface chequered with dark marks on a lighter ground. The under surface of the wings vies with the upper in beauty, being in most of the species washed with silvery streaks, or studded with spots of the same radiance. The presence or absence of these marks shows whether the species belong to the genus *Argynnis* or to *Melitæa*. Of the latter we have no representatives in the neighbourhood, at least to my knowledge: the former contains six species, and of these I have seen three in the district, and Mr. Gaviller vouches for two others on Marlow Common.*

* The reader will recollect that a "district" is the area comprised within a radius of five miles from the Parish Church; I cannot now recollect whether Marlow Common falls within this area. [It does.—ED.]

THE PEARL BORDERED FRITILLARY (*Argynnis Euphrosyne*).—This is the commonest of all, and may be seen in the openings in woods, and in lanes, from the end of May till the end of July. The wings, like those of all the species, are of the hue known to entomologists as fulvous—a very rich light brown, and are marked with black spots and bars. The under side of each hind wing has *one* silvery spot in the centre.

THE SILVER WASHED FRITILLARY (*A. Paphia*).—This is one of our most magnificent butterflies, and the sight of one seated on a bramble flower is never to be forgotten. A worn and battered specimen in the autumn of 1864 was the first I chanced to see; it was flying lazily about in Winch Bottom. I waited till the following summer, and looked anxiously for its reappearance, but for some time was disappointed. In the month of July, however, I asked a friend to go one very warm day, and he brought back five or six specimens. I then set off myself, and succeeded in tracing them to a wood some distance up the lane to the right, where colonies of them were holding high festival over the bramble blossoms. This wood I found to be the “metropolis” of these insects; they are plentiful in it every year. If any of our readers would enjoy a sight of natural happiness and beauty, I would recommend them to pay a visit this month to the spot, and it will serve them with remembrances for their winter meetings. Many a time have I sat down and watched *Paphia* sailing majestically down some avenue in the wood, or up the lane till the temptation of the blackberry flowers overcame it, and it would sit upon one with its bright wings outspread, till it had imbibed its fill. It is a far greater pleasure to watch them than to catch them. The female has the upper surface suffused with an olive green tint; both sexes have the under side of the hind wings, washed with silvery streaks. They occur plentifully also by the woods on Naphill Common.

THE SMALL PEARL BORDERED FRITILLARY (*A. Selene*).—I first made the acquaintance of this species on the late Wycombe Heath. Early in June it was flying about in considerable numbers. When on the wing, it can scarcely be distinguished

from *Euphrosyne*, except by a deeper tint of colouring. The markings are very similar in both species, but *Selene* is known by having a row of silver spots on the hind wings where *Euphrosyne* has but *one*. When Wycombe Heath was destroyed, I gave up all hopes, for I had not seen *Selene* anywhere else : but in 1866 I caught several in a wood at Lane End, so it is still a denizen of our neighbourhood.

The two species which Mr. Gaviller took are *Adippe* and *Aglai*a, occurring on Marlow Common ; both have large isolated silvery spots underneath the hind wings. I was unable to pay more than one visit to the spot, and then I was not fortunate enough to see either of them. A specimen of *Aglai*a was once brought me, said to be taken in the neighbourhood of Abbey Barn, but I was not satisfied about it.

The caterpillars of all the species feed on different species of *Viola*, especially *V. canina*, the Dog Violet ; they are very dark in colour, and covered with spines. They are seldom seen except by those hunting expressly for them.

There is a very small butterfly liable to be mistaken for a Fritillary, and occurring very plentifully in Dane Garden Wood : it is THE DUKE OF BURGUNDY (*Nemeobius Lucina*), and belongs to a different family altogether. Collectors look upon it as a prize, since it is only locally plentiful. It is said that the caterpillar has never been found in England, though it is known to feed on the leaves of the primrose.

HY. ULLYETT.

Proceedings of the Society.

SEVENTH EVENING MEETING, APRIL 9.—Held at the house of John Parker, Esq., by his kind invitation. The chief feature of the evening was a paper by Thos. Marshall, Esq., "On the Destruction of Birds," which will be found at p. 99 of the present number ; this was listened to with great interest, and at its con-

clusion a conversation ensued, in which our feathered friends were ably and warmly defended. Mr. Sharpe was prevented by illness from delivering his paper "On the British Tits;" its place was supplied by a discussion on the subject of the Future Life of Animals, in which so much interest was evinced at the meetings of the First Winter Session. The objects exhibited were, as usual, numerous; among them were the four ear bones of the Rabbit, with the ear bones of several birds, illustrating the difference of structure between the ear of the bird and that of the mammal; casts of the bones of the *Dinornis*, by the President; a tray of fossils; several cases of stuffed birds; and many wild flowers in blossom, those of the greatest interest being the Yellow Star of Bethlehem (*Gagea lutea*), from Charlbury, Oxon, and the Mezereon (*Daphne Mezereum*), and Lent Lily (*Narcissus pseudo-Narcissus*), from our own neighbourhood. The microscope, which it is intended to present to Mr. Ulyett, the late Secretary, was on the table. The usual votes of thanks terminated the meeting.

ANNUAL CONVERSAZIONE, APRIL 30.—The success which last year attended the Conversazione held in the Council Chamber, induced the Committee to engage the Town Hall for this occasion; the greatly increased interest manifested in the well-being of the Society leading them to believe that such a step would be generally appreciated. That their ideas were well founded, the very large attendance amply testified. Every intimation was given that there would be no charge for admission; it being felt that rich and poor alike should have an opportunity of admiring the works of Nature. The kind co-operation of many friends of the Society tended greatly to the success of the evening, and we take this opportunity of thanking those ladies who so kindly assisted in arranging the objects for exhibition. Our appeal for assistance met with a warm response in every respect. At seven o'clock the company began to assemble, tea and coffee (kindly provided by friends of the Society) being handed round; after which, the objects exhibited having received a share of attention, the Secretary, the Mayor, and some other members of the Society ascended the platform, and the President (the Rev. T. H. Browne) delivered the following

ANNUAL ADDRESS.

"THE retrospection of the year that is past is once more assigned to myself. It is my painful duty to announce that, since our last Annual Meeting, we have lost by death a valuable and esteemed member—the late Robert Wheeler, Esq. He was present with us last year, and took a lively interest in the proceedings on that occasion. His character and worth is too well known to you all to require anything like a eulogium from me; I should not, however, be doing justice to the Society, or to the esteemed and honoured memory of our departed friend, without this passing notice.

"I think we have reason to congratulate ourselves upon the present condition and future prospects of our Society. Our numbers have increased beyond our most sanguine expectations; and, as it is not unreasonable to conclude, that, when any join a Natural History Society, they have already a taste for natural science, or are desirous of possessing and cultivating that taste, from the increase of numbers may we not augur well for the future? Our Evening Meetings have been well, and, in some cases, numerous, attended. If we may judge from what we have seen and heard, an interest has been awakened, and on some occasions much scientific gratification has been experienced. At these reunions the members have used the privilege, to which they are entitled, of introducing friends. Many of those who came as visitors have enrolled themselves as members. We welcome all who can sympathise with us in our appreciation of the wonderful works of God. Many and varied branches of natural science have engaged our attention during the last Winter Session. Sometimes these subjects have been broached in general conversation, sometimes in the shape of colloquial addresses, and sometimes in the more set form of written papers. Four of these papers were intended to illustrate Geological science. Our late Secretary, Mr. Ulyett, sent us a communication on the Mammalia of our neighbourhood, which elicited much interesting conversation, as well as important information from the members present. We have had four papers on that very fascinating branch of natural science—Botany. One was written by our Secretary, on the Phanerogamic Plants of our neighbourhood. One was sent us from a gentleman at a distance, on the Cryptogamia—the Agarics—called in popular language, Toadstools. It is not a very attractive name, but the writer of the paper most logically proved that a vulgar prejudice has hitherto prevented a most valuable gastronomic gratification. Two other botanical papers treated of those most beautiful, and to those who are acquainted with them, most interesting objects—the Desmids and Diatoms. An extremely interesting and very scientific paper was forwarded to us by Robert Holland, Esq., of Mobberley, Cheshire, "On some Resemblances between Plants and Animals." The writer set forth some very striking analogies existing between these two great provinces of the natural kingdom. Mr. Marshall favoured us with a very

practical and useful paper, on the folly and sin of a reckless destruction of our native birds. We wish that those who disturb the balance of creation by this wholesale destruction of the feathered race could become indoctrinated with the spirit of that communication. We might then hope that our fields and trees would be cleared of the grub and caterpillar which now endanger both, and pleasant sights and sweet sounds from above would oftener gladden every lover of nature. One paper on Reptiles and two communications on Entomology complete our list.

"The geological papers were followed by discussions on that most important and interesting subject—the age of the physical world. It is a question from which in the present day we cannot turn aside. It is continually coming before the mind. Every observation only confirms the great principle of the geologist, as now entertained by the thoughtful and observant mind—that creation was very slow and gradual in its development, and that our globe is indeed hoary in years, or rather, hoary in ages. Perhaps we are not saying too much if we affirm that human language would fail to describe how ancient is the earth—that though the mathematician might calculate the duration of its past existence, the human intellect in its present state would fail to comprehend its meaning.

"It would be difficult in a popular assembly to bring this matter down to the comprehension of those to whom the subject is almost a new one. None can expect to have scientific conclusions on this subject, without much reading, thought, logical reflection, and arduous observation of facts as recorded on the stony pages of God's book of nature. Mere reading will not make a geologist. Of course, we proceed in investigating the subject, by reasoning from the operation of physical laws known now, to the operation of those laws in ages long since gone by.

"Analogy in reference to Jehovah's works is a safe principle of reasoning. When we have once traced the connection between effects and causes in the physical world, we may with certainty conclude that a like cause has been in operation where we can trace a similar effect. According to this principle—from what we now see going on in the formation of hills and valleys—from the action of air and rain—of river and sea—we think we are safe in reasoning back to what these important agencies accomplished through ages past. I see nothing in the volume of revelation that is opposed to this important conclusion. Not that I think that the inspired word was intended to teach man science. Inspiration, according to the known laws that are in operation now, is a miracle. The word of God as now given to us is a miracle of divine kindness to mankind. But miracles are not wrought by Him when the known laws which He has established can accomplish the desired result, or man, by his unaided intellect and observation, can elicit facts or work out principles.

“When God made man, He left him, even in a state of innocence, to develop the fruits of the earth by his own intelligence and industry. They could have grown up spontaneously if the Creator had willed it. God has placed us in a world of wonders, where facts abound on every side, and mighty laws are operating. But in the great volume of nature, written as in tables of stone, Jehovah is teaching us of facts that have transpired, and of laws that were operating in ages long since past away. These facts were like what are known now, these laws are analogous to what are working now. Why did God write these records of His doings in ages past? He might have given them all by inspiration. No—He wrote them thus for us to read—for us to work out, and learn how steadily and how gradually He has been developing creation until now. Revelation was not designed to teach us this, which the great book of creation is able to teach, and the mind of man can, by patient labour, learn for itself. But revelation does not contradict this conclusion; on the contrary, it seems to confirm it. It teaches us that this law of gradual development prevails through all God’s dispensations. It is seen in God’s providential dealings with mankind. It is illustrated in civilization, the arts and sciences, the gradual overthrow of ignorance, superstition, and ungodliness; in the spread of divine truth and real religion upon earth. Even the history of redemption was very slowly and gradually unfolded to the minds of mankind.

“It is the Mosaic account of creation that prevents many from receiving, as a matter of faith, these statements respecting the world’s antiquity. There are three modern interpretations of the inspired narrative which I can only notice, without attempting to prove or disprove either. Indeed, the subject is by far too important and recondite to admit of its being discussed in the popular address of an Annual Meeting. We may be sure of one position—that whether we can harmonise to our satisfaction the book of revelation, and the opening book of the geologic world—there can be no contradiction,—the hand that wrote the revelation of heaven, laid the foundations of the earth. We venture also to advance that the bible is a popular book. The authors wrote as those who belonged to the popular part of the community, and for those who knew nothing of science. If it had been written on strictly scientific principles, then, for ages and generations past, all would have been wrapped up in mystery. The origin of the world—the part which Jehovah took in His own creation, would have been unknown.

“In the first verse of Genesis we have the grand opening of the Divine revelation: “In the beginning God created the heavens and the earth.” So far we might have expected the Eternal Father to have revealed Himself and His works to His creatures. Between that great event and what transpired since then, a part of which, so far as we are concerned, is narrated in the

following verses—may have intervened a space of which millions of ages may have been but units. The work of creation in connexion with our own globe and the solar system is narrated in the following verses. Here, then, is started the enquiry, Are we to understand this literally—six days of twenty-four hours each? or does the term day, according to a common usage of Scripture, express a very long though definite period of time? or have we here the utterances of a prophetic mind—the narrations of the prophetic historian's mental apprehensions and visions, when he was under the power of Divine inspiration? That is to say, Did he see, as it were, the work of creation commence, and go on unto completion, when under the influence of the prophetic ecstasy, as probably the other prophets of God did when they were under the inspiration of the Holy Ghost? They saw facts in vision as if to them they were realities, and as some think, pictorial views, in which objects that were near and those which were afar off, were present to the mind like the wide expanse of a glorious landscape, in which the near and the distant appear to the eye at the same time—and were written as thus seen. So God made the mental perception of the prophetic historian to take in, during six days' revelation, all things which transpired from the commencement of creation to the placing of man on earth. Thus the return of morning and evening would be literally true—but true in relation to the prophet's divine ecstasy rather than as expressing the period of the Creator's operations.

“Thus only shall we enter on the true course of progress, when we feel such a divine impulse to go forward—for only as you advance can you be happy or wise. Go forward—all things around are moving, and every thing in creation is developing into a higher and higher state of being—and thus they say to us, Go forward. Let “Excelsior” be our motto—let progress be our aim.

There is a firefly in the southern clime,
Which shineth only when upon the wing;
So is it with the mind,—when once we rest
We darken. On! said God unto the mind,
As to the earth, for ever. On it goes,
Rejoicing native of the infinite—
As a bird of air—an orb of heaven.

Go forward, but with all your study of creation, ignore not creation's God. The German has said that we may see in nature all that we bring an eye to see it with. Christ has said the pure in heart shall see God. Let us not be of the number of those who see there everything but God, but of those who see God in everything. The universe is Jehovah's temple: let us not admire the temple, for the solidity of its foundation, or the grandeur and beauty of its structure, but see no God there; rather let our admiration of the created fill us with adoring thoughts of the great All in All. Then indeed shall creation seem refulgent with the glories of the Eternal King, and all things around be vocal with His praise.”

A paper "On Buttercups" was then read by the Secretary, in which the land species of the genus *Ranunculus* were described in a popular manner; the localities in our own neighbourhood where each species may be found being given, with notes on the "vertues" attributed to them by our ancestors. The paper was illustrated by plates of each species, from Hardwicke's 'English Botany.' The third paper, read by the Secretary in the unavoidable absence of its author, R. B. Sharpe, Esq., was "On the British Titmice (*Parinæ*)," each species being technically described, and popular notes on its habits being added; Mr. Sharpe strongly condemned the bird-murder unfortunately so popular among uneducated persons. A beautiful collection of the Titmice illustrated this paper, the male and female of nearly every species being shown, as well as the eggs, and, in one or two cases, the nests.

After the reading of the papers, the President briefly explained several of the more interesting geological specimens, especially the bones of the *Dinornis*, the fossil Bugs, and the Ammonite and Nautilus tribe. Many interesting objects were afterwards exhibited under the microscope, and it was not till it grew late that the concluding votes of thanks were moved. The Mayor proposed the thanks of the meeting to the Rev. T. H. Browne for his unwearying exertions to promote the interests of the Society and for the interesting paper he had read; this was seconded by Thomas Wheeler, Esq., and heartily responded to. F. Wheeler, Esq., moved, and Mr. Butler seconded, a similar vote to the Secretary, which was carried by acclamation, and responded to by Mr. Britten. The friends then began to disperse, and we believe that every one departed greatly delighted with the pleasant and profitable evening which had been spent.

The following were among the principal objects exhibited:—

OSTEOLOGY was represented by a beautiful and perfect skeleton of the American Crocodile (*Crocodylus Americanus*); a skeleton of the Oyster Catcher (bird) (*Hæmatopus Ostralegus*); carefully prepared bones of the two British representatives of the Salamanders, commonly called the Water Newt (*Triton cristatus*, and *Lophinus* or *Lissotriton punctatus*); the skull of a large bear from Thibet; portions of the skull of the Ethiopian Wart-Hog (*Phacochærus Æthiopicus*), with enormous tusks; the jaw of a Boar, with fully-developed tusk; two scapulæ, or shoulder blades, of a Whale; the

skull and lower jaw, with teeth, of a young Indian Elephant; two femurs, and a humerus of a large African Elephant from the Gaboon country; organic remains, illustrating nearly every division and sub-division of geological science, from the Lower Silurian up to the Glacial periods and time of Coal deposits; casts of rare fossils, amongst which especially may be noticed *Homalonotus delphinocephalus* and *Asaphus tyrannus*, two very large forms of Trilobite; casts of six species of the New Zealand Moa, or gigantic Ostrich, including *Dinornis giganteus* variety *maximus*, *D. gracilis*, *D. crassus*, and other forms; casts of the eggs of the large extinct birds *Dinornis* and *Aepyornis*, and eggs of the large Ostrich, Emu, and Cassowary, to contrast with these giant forms. There were five different kinds of Ivory used for economic purposes, viz., the tusks of the Elephant, Walrus, and Hippopotamus, the tibia of the Giraffe, and the alburnen of the Ivory Nut, the fruit of a species of Palm tree (*Phytelephus macrocarpa*).

IN GEOLOGY, besides the fossil bones mentioned above, the President exhibited fossil wood from the Gault, Upper and Lower Greensand, Wealden, and Coal measures: also several species of Ammonite, one of which, *Ammonites giganteus*, from the Portland Oolite, deserved special notice. Two very large specimens, *Nautilus elegans* and *N. pseudo-elegans* from the Upper Greensand, at Warminster, were much admired; a number of other specimens were also exhibited, including some from the Red Crag; and a variety of sponges from the Upper Greensand, with recent species for comparison with the extinct forms. Trays of Chalk Fossils, many from our own neighbourhood, were lent by E. Wheeler, Esq.

CONCHOLOGY was represented by a collection of Land and Freshwater Shells, arranged according to Turton's 'Manual,' contributed by the President; also a collection of Marine Shells, by the same; and another of those found at Teignmouth, Devon, by Miss Chandler.

ENTOMOLOGY was illustrated by the President's valuable collection of *Hymenoptera*, including the Bees, Wasps, Ants, Ichneumon Flies, and Sawflies; a case of Marlow *Lepidoptera* was exhibited by J. B. Mathison, Esq.; *Colcoptera* and *Lepidoptera* were also shown by the President; a case of Wycombe Insects, arranged by Mr. Ulyett, and others of foreign species by G. Vernon, Esq., and T. Wheeler, Esq.

ORNITHOLOGY, in addition to Mr. Sharpe's collection of Titmice, was represented by various rare Birds from that gentleman's museum, among which were the Golden Oriole (*Oriolus galbula*), the Rose-coloured Pastor (*Pastor roseus*), and the Red-winged Starling (*Agelaeus phoeniceus*). Cases of Birds were also lent by Messrs. Simmonds, Vernon, Thurlow, B. Lucas, and others.

BOTANY was fully illustrated. A conspicuous object, and one which attracted much attention, was a table covered with living Wild Flowers in blossom, arranged by Miss Chandler. Among them was the rare Coralwort

(*Dentaria bulbifera*). Specimens of the beautiful Pasque-flower (*Anemone Pulsatilla*), in a living state, were sent from Aldbury Nowers, near Tring, by the Rev. H. Harpur Crewe. Miss Chandler's valuable *hortus siccus* was duly appreciated, as was the herbarium of Mr. Stubbs, of Henley: this gentleman also sent a collection of Ferns, and some very beautiful groups of dried flowers and leaves, arranged on cardboard, the natural colours being admirably preserved, which received much commendation.

In addition, it may be added that a selection of valuable illustrated works was provided, as well as a portfolio of plates illustrative of British Botany; and some beautiful sketches of Fungi, by the Rev. Bryant Burgess. The walls were decorated with coloured diagrams, some lent by J. Rutt, Esq., others by J. Slade, Esq., Secretary to the North London Naturalists' Club. The tables were decorated with flowers, cut and in pots. One very interesting object was a glass containing specimens of living *Foraminifera*, *Hydra tuba*, *Entomostraca*, and *Infusoria*, developed in an aquarium, the water not having been changed for six years. Mrs. Woollams, by whom these interesting specimens were exhibited, has been singularly fortunate in maintaining that balance of life upon which the success of an aquarium so greatly depends.

Correspondence.

HEBENON.—I have followed the friendly controversy on this subject with some interest, and hold entirely with Mr. Britten that Henbane and not Ebony is meant. I think the word "juice" is decisive. Ebony could only be known to Shakespeare and to those he was writing for, as a dry, sapless wood: how then could he speak of such a thing as a phial of its juice? Whereas, the clammy, fetid nature of Henbane was just such as to suggest itself to the poet's mind, and to be understood by his audience as a fitting instrument for the purpose. I grant that the expressions of our poets are not always to be tested by scientific truth. An amusing catalogue might be composed of their ludicrous mistakes, at the head of which might stand Dr. Watts and his "busy bee," that

"Loads with yellow wax her thighs,
With which she builds her cells,"

whereas the pellets on the bee's

thighs are not wax at all, nor are they used in the construction of the comb. But, if such assertions are not scientifically true, they always agree with the popular opinion; and Henbane was universally held poisonous—Ebony not. Dryden speaks of the "poisonous Henbane," and from Dioscorides downwards there is a terrible array of authorities for its poisonous effects. Besides, how could Shakespeare (who seems to have been well acquainted with Scripture) introduce as a cursed poison that which the prophet had enumerated among the precious commodities contributed by the merchant-princes of Dedan to the luxuries of Tyre? Mr. Payne brings forward a great amount of learning, but he does not seem to have one single argument to offer, except the unproved assertion that Ebony was called the Tree of Death of the Persian Paradise; and even if this

were so, it might be from its black, funeral colour, and not from its poison. It is true there is the greater similarity of the name, but poets are fond of sounding words, if they vary not too much from the correct mode of spelling. Horace allows that poets have the right to use *nova fictaque verba parce detorta*, and Milton's "Euphrasy" is an anglicised term, though so near the original that it could not be mistaken. Mr. P. need not have sneered at what he calls "Mr. Britten's profoundly scientific remark" about the different effects of Henbane upon different persons; it was a fair answer to his objection about the symptoms enumerated by the poet; and certainly the effects of Henbane seem most diverse—blindness—delirium—madness—death. Shakespeare might well add leprosy without any material increase of the catalogue. One great point in determining the matter is "Did Shakespeare wish to use such language as would fall in with the pre-conceived notions of his audience, and was Ebony or Henbane more likely to do this?" My own opinion is in favour of the latter.

REV. R. WOOD.

Westward, Cumberland.

THE GOOD OLD TIMES.—About the year 1809 I was introduced to a residence amidst the beech timber and underwood and commons which abounded on the Chiltern Hills of Buckinghamshire. At this time very many animals and reptiles were denounced as common enemies, and, as such, a price was set upon their heads, decided upon by the vestry and paid by the churchwardens, as shown by the following items as charged in the churchwardens' accounts of the period:—"A viper, a slow or blind worm, 6d. each." These were supposed to sting the sheep while at feed. The tongue of the former was supposed to be its sting, and the latter effected its injury by some other process; and many ailments amongst the domestic farm animals were attributed to the above causes. The general specific was an ointment made by frying the body of either viper, or slow-worm, in lard; and many a good housewife

would pay the stipulated reward, thus to become a kind of Lady Bountiful, by a gift she bestowed of the grand specific to anyone requiring it in the neighbourhood. Sixpence was also the price set on the poor hedgehog. He was charged with sucking the milch cows as they lay down during the night, thus producing a disease called "the gargut,"—being no other than an inflammation of the udder, generally then, as now, produced by cold. The grand specific for this was an ointment of hedgehog fat. Another charge was for the destruction of sparrows. In the spring of the year, the price, regulated by the annual March vestry, was, for sparrows' eggs, a halfpenny a dozen, young sparrows, a farthing each, hen sparrows, a penny each, cock birds a halfpenny each. Thus, without taking into consideration the good arising from the destruction by them of innumerable insects, pests of garden and field, they were denounced for injury done to wheat just on the edge of harvest. I am not aware of any kind of parochial reward for foxes, as the slayer of a fox considered himself amply rewarded by carrying it to all the farmers in rotation, a shilling being the expected reward; but a good poultry wife would often make an addition of a bit of victuals and a pint of beer. After having done duty in the neighbourhood of its death, it would be sold by its cunning possessor to some mate in another district, who would pass it off as fresh killed till decomposition would render it past endurance, and the trick was "smelt out." Things are now changed: vipers, whose bite is venomous, and who would rather glide away than attack, are almost extinct. The slow or blind worm neither bites or stings; and the hedgehog, whose small mouth renders it incapable of sucking the mammal of a cow, and whose prickles would soon render its company disagreeable even to a sleeping cow, is now petted by the London bakers for the purpose of devouring the beetles which infest their bakehouses; and is equally useful for the same purpose against those that infest the gardens. G.

The Birds of Cookham and the Neighbourhood.

BY R. B. SHARPE.

HAVING been requested to write a paper on the birds which have been observed in the neighbourhood of Cookham, I have great pleasure in presenting the following sketch of the ornithology of the district. The beautiful collection formed by Mrs. De Vitré at Formosa has been the basis of the accompanying list; I have further included such species as are in my own collection, or are in the possession of private individuals, and I have taken every pains to render the list as complete as possible. To Mrs. De Vitré I must return my best thanks for her kindness in allowing me to examine the specimens in her collection, and also for her assistance and encouragement in the preparation of the present essay, while I am fortunate in obtaining the help of Mr. Briggs, the head-gardener on the estate, who has, from his earliest youth, studied the habits and economy of our British birds, and is well known in the neighbourhood of Cookham, as an enthusiastic naturalist and a clever taxidermist; nor must I omit to mention Mr. Joseph Ford, to whom I am likewise indebted for much interesting information.

Order ACCIPITRES.

Sub-order I. ACCIPITRES DIURNI.

Fam. FALCONIDÆ.

Sub-fam. AQUILINÆ.

Aquila.

1. *Aquila chrysaetos.* The Golden Eagle.

Before he came to Cookham, Mr. Briggs was employed as a keeper at Bulling Bare, a place about ten miles distant, and while there he had an opportunity of recording the occurrence of this rare British bird from his own personal observation. He was one day walking in company with another keeper near the outskirts of a plantation on the estate, and in the adjoining field

several pheasants were feeding. These suddenly began to show some signs of alarm, and a great many flew up quickly and took refuge within the cover. Before, however, they could all gain a place of safety, a large Eagle swept down upon an unfortunate individual, and carried him off. Mr. Briggs's fellow-keeper at once set a trap near the place, and had the good fortune to capture the marauder three days afterwards. He proved to be a fine Golden Eagle, the only one, I believe, ever observed in the county.

Pandion.

2. Pandion haliaetus. The Osprey.

In the *Naturalist* of November the 1st, 1864, I recorded the occurrence of the Osprey at Cookham. On the 6th of October in that year Mr. Briggs was engaged in the garden at Formosa, when his eye was attracted by the appearance of a large bird flying slowly along the outskirts of Lord Boston's wood. As he stood watching, the bird sailed directly over to the spot where he stood and circled round his head at about the height of thirty yards, turning its eye downwards, and apparently taking stock of him. He called to one of the men near him to fetch his gun, but by the time it arrived, the Osprey was out of the reach of shot, and was pursuing its course down the river with the same easy and graceful flight. A gentleman, however, who was on the water, saw the bird approach, and shot it in the wing when it fell into the water and was killed with the boat-mop. For some days previous a large Hawk had been observed in the neighbourhood of Hedsor, and three days afterwards another Osprey was seen near the same place by a man named Stanniforth, who used to attend to the Lock at Cookham. We heard that there was one killed about this time near Windsor, which we conclude was the above-mentioned bird. Similar instances have been recorded of the occurrence of the Osprey inland, and Mr. Harting in his interesting work on the 'Birds of Middlesex,' has mentioned its appearance at Uxbridge in 1863, and again in 1865 at Southgate, where a pair remained for some days.

Sub-fam. BUTEONINÆ.

Buteo.

3. *Buteo vulgaris*. Common Buzzard.

A very fine male of this species was shot at Hollyport in 1862, and was sent to Mr. Briggs for preservation. The way in which it was captured was rather curious. A man named Wells was trying to shoot some woodpigeons, and had placed on the ground a little distance off a stuffed bird for a decoy. He had not waited long before the above mentioned Buzzard swept down and was carrying off the stuffed bird, when he shot it.

Sub-fam. MILVINÆ.

Milvus.

4. *Milvus regalis*. Kite.

This bird is now of very rare occurrence in England, and it is hard to imagine the former abundance of the species. A friend of mine informs me that about six or seven years ago a specimen was captured on the roof of a large warehouse in London, and lived for some time in confinement, and in the Zoological Gardens there is a Kite, presented by Howard Saunders, Esq., of Reigate, which was taken in England, being one of three nestlings he had received. With regard to its appearance at Cookham instances are wanting of late years, but in the memory of several of the inhabitants, the Kite used to be *quite a common bird* at Pinkney's Green, an unenclosed heath about four miles distant.

Sub-fam. FALCONINÆ.

Hypotriorchis.

5. *Hypotriorchis subbuteo*. The Hobby.

The Formosa collection contains a beautiful male Hobby shot at Cliefden in 1860, and we have also occasionally observed it sailing over the woods in the neighbourhood. The courage of this pretty little Hawk has always been a favourite theme both with naturalists, and the lovers of Falconry, and I am able to give a striking instance of its pluck which came under Mr. Briggs' own observation, when at Bulling Bare. He had found a nest of this species in one of the plantations on the estate, and only waited till the young ones were fledged, to take them.

Accordingly, he mounted to the nest, and was immediately greeted with loud cries from the young birds. The male Hobby hearing the screams of the nestlings, sailed over to the spot, and surveyed the scene of action from a considerable height. Suddenly as Mr. Briggs was preparing to descend with his captives, the bird darted down from above with immense velocity, his wings cleaving the air with a loud whish-sh-sh as he shot down to within a foot of the intruder's head, and then carried up by the impetus of his descent, he mounted as swiftly as he had stooped, and only paused a second ere he recommenced the attack. This was renewed in quick succession as Mr. Briggs descended, causing in his mind no small apprehension lest the courageous bird should strike at his face. Having reached the ground in safety, and wishing to obtain the old bird, he carried the young into the middle of a neighbouring field, and having made them scream, stood ready with his gun. No sooner did the parent-bird hear the young cry, than he again appeared, and from an immense height swooped at Mr. Briggs with the same astonishing velocity that had characterized his former descents. So sudden was the attack that there was no time to fire, and the bird ascended like lightning. Would that I could now add that the Hobby escaped, but alas! love for its nestlings impelled him to make one more stoop, and in the midst of his next descent, the gun was fired, and the poor Hobby fell to the earth "like a thunderbolt." The difference between the mode of attack of the Sparrowhawk and that of the Hobby in defence of their young is also noticed by Mr. Stevenson when writing on the former bird in his 'Birds of Norfolk.' The Hobby seems always to descend from above, while the Sparrowhawk dashes backwards and forwards, sometimes even striking at the intruder.

6. *Hypotriorchis oesalon*. The Merlin.

Although neither Mrs. De Vitre nor myself possess a specimen of this bird actually shot at Cookham, still the species has occasionally been observed by Mr. Briggs flying in the neighbourhood, and I have received eggs from a man named

Grace from Wooburn, a village about two miles to the north-east of Cookham. At Bulling Bare Mr. Briggs tells me it was by no means uncommon, and he was once witness to a remarkable specimen of this falcon's audacity. He was standing near a thick bush at the above estate, when a chaffinch, closely pursued by a male Merlin darted into the thicket like a flash of lightning. Nothing daunted by his presence the Hawk dashed in, and dragging the unfortunate chaffinch out, was carrying him off, when Mr. Briggs put an end to his career by a well aimed shot. In this instance the chaffinch was quite dead (perhaps killed by the shot) but he tells me that in many instances when he has seen these hawks flying with a bird in their talons, he has fired at them, though far out of shot, in order to make them drop their prey, and several times he has seen the birds fly away unhurt when released by the hawk. I have recently purchased four Merlin's eggs taken near Ongar Wood on the 2nd of July. They were found on the ground, and were much incubated, and I hear from Mr. Davy, of the Highgate-road, that about ten years ago he also received a nest of young Merlins from the same neighbourhood.

Tinnunculus.

7. *Tinnunculus alaudarius*. The Kestrel.

The Kestrel is a very common bird at Cookham, and breeds in large numbers in Cliefden Woods, sailing over which I have sometimes seen six at once. Some time ago, this species bred for two successive years in some tall fir trees at Formosa, where the nest was discovered by Mr. Briggs, and the bird is often seen in the neighbourhood of the tall elm trees on the estate. Last year it was especially common, and I saw several specimens in Mr. Burrow's grounds at "The Elms." As regards its food a curious instance came under my notice the other day, when a friend of Mr. Briggs sent him a male Kestrel "just as he shot it." It was grasping a slow-worm in its claws, and so tightly, that when it arrived at Cookham from Reading its feet then held its victim, which was still living. The food of this bird I believe to consist chiefly of small birds; and although it may be in pursuit of mice,

when observed hovering over the stubble fields, which is the general opinion of authors, I am inclined to think it is more probably attracted by the sparrows which collect in such numbers in the stubble. At least, this is my opinion, for on many occasions I have pursued these flocks of Sparrows to get for myself a "Sparrow-pie," and on one occasion, I remember well, having crept close up to a flock, I was about to fire from behind the hedge, when I saw a brown thing jumping about on the ground in the midst of them. I thought at first it was a stoat, but I soon saw it was a Kestrel, and I stood watching it. What surprised me most was, that the Sparrows did not fly, but were dodging about like mice on all sides of the Hawk, apparently aware that if once on the wing, the Hawk would soon overtake them, whereas, on the ground their smaller size and superior agility enabled them to elude his grasp. The Kestrel, however, conquered, for I heard a squeak, and then the whirr of the flock as it took flight, and immediately after the Hawk flew over my head with a Sparrow in its claw. I had never thought of firing till he was out of reach, but I followed the direction he took, and he finally darted out from under a plough-share, where I found the Sparrow with his head eaten off. The Kestrel is also an enemy in winter to the Siskins, Redpoles, and Goldfinches, which at that time of the year frequent the alder-trees. When one day I had shot into a number of Siskins, and the flock had resettled on the tree again while I was reloading, a male Kestrel sailed over my head and carried off a victim in my presence. Mr. Briggs has also seen them glide quietly along the edge of the trees and seize the Siskins, which, when feeding, always hang at the outermost tips of the branches. I am very fond of keeping this species in confinement, and was speaking to a London bird-fancier lately about some young birds, and asking if they could feed themselves. In proof that they could he produced the smallest bird out of five, which had been killed by the others, who had begun to devour it. Who would have thought of the Kestrel being such a cannibal?

(To be continued.)

Instinct v. Reason.

I HAVE used the same heading as that of the article in the July number, but I must protest against it, since it shows that the subject in dispute is not rightly apprehended. Although I am prepared to cite some of the greatest names in support of the view that the lower animals possess Reason, I am not aware that any naturalist has, as yet, denied that they possess Instinct. Therefore it is not "Instinct v. Reason," but it is this: we believe that they possess Reason in addition to Instinct, even as we, the "nobler" part of creation do. With us Reason predominates; with them, Instinct; but both qualities are present in the whole animated world. It is quite as necessary that this should be perfectly understood, as that the words themselves should be properly defined. The "distinction between Reason and Instinct," given by your fair correspondent, is rather misty, the said "*distinction*" being "the *difference* between the human mind and that of the animal;" this appears to be a distinction *with* a difference. But I am quite prepared to fall in with her definition of Reason, given immediately after, viz., "the action of the mind upon knowledge," or rather the *power* of the mind to act upon knowledge: and, having this definition, I cannot see how Reason is to be denied to the lower animals. How can there be a mind without Reason? And the above "distinction" gives the animal a mind. This is simply one of those instances in which a disputant tacitly acknowledges the truth of that which he is opposing by the unconscious use of a word implying it all.

But as my intention is simply to answer the article in your last, and not to write an essay, I will take up the arguments therein supposed to be advanced.

I do not think it has ever been said that any reasoning faculty was exercised by a bird, bee, or ant, in the construction of their several dwellings, so we may put all reference to these on one side: the first statement to be noticed is that in connection therewith,—

"We cannot say that they can have any knowledge of what they are doing." Why cannot we? And if it comes to that, can we say that they have not? As far as I can see, we have not so much right to make this assertion, as we are justified from analogy in making the opposite. Did not the Crow on p. 25, and the Sheep on p. 26, know what they were doing? When a dog goes to the fire on a cold night does he not know he is doing so? does he not know that he will be warm there? And when he whines to be let into the house, is he ignorant not only of the reason but also of the *fact* of his whining? I am sure if anyone told your correspondent that her pet dog or pony was only an ignorant, unconscious mass of animalised earth, she would feel highly indignant.

Again, she asks, "If they had any knowledge of what they were doing, why should not all alike use the same care for their young?" I ask, in reply, Is it necessary? Are all their young equally susceptible? Her question throws discredit on the Creator of the animals. But do all human mothers use the same care for their infants? The same argument applies in this case.

Once more I quote—Why are the nests not always placed in the best and safest locality? Supposing they are not, does this betoken lack of Reason? Surely the question puts the argument wholly into my hands; were it simply Instinct, they always would be so placed, since this quality is said to be "unerring." Do we, the "nobler" creatures (I am fond of this phrase), always put *our* domiciles in the best and safest places? If we do not, and if your correspondent adheres to her style of argument, then, *we* are destitute of Reason.

In conclusion, I cannot but admire the *naïve* and artless manner in which my fair opponent says "*It is quite clear* that they are unconscious instruments of what they perform," when not a single line beyond bare assumption has been brought forward to support such a statement.

HY. ULLYETT.

Since I wrote the above I find that some one has written an article in the *Intellectual Observer*, showing that there is something more than Instinct employed by birds even in nest-building. I have not read it, and it would not invalidate anything I have advanced.

The Chiltern Country.

(Continued from page 88.)

FAWLEY. (*Falle-ley.*) Fallow or arable land.

FINGEST. This curious name appears in Domesday Book as *Dile-hurst*, and is properly spelt *Ding-hurst* or *Thing-hurst*, indicating the place where the *Thing*, or Court of the Hundred, was held.

FULMER means *foul marsh*: and every one who has seen it in the early months of the year, and heard the stories of old inhabitants, can readily imagine how appropriate the name must have been in days when drainage and roads were unknown.

GERRARD'S CROSS COMMON is distant a very short way from Fulmer; and over this common, avoiding that village, pass the principal highways of the neighbourhood. Who Gerrard was, and why he was immortalised by linking his name with this pleasant spot, no one appears to know for certain. The country people tell you that he was the younger of two brothers, who fought with swords at the cross roads, and that the elder fell; also that at twelve o'clock, on certain nights of the year, they may still be seen fighting over again their unnatural combat. The peasants of the Harz mountains in Germany have a very similar legend, which has been elegantly versified by Heine.*

HAMBLEDEN (*Hamel-den*) means the village in the valley, *Hamel* being equivalent to *hamlet*, and the diminutive of *ham*.

HAMPDEN appears to be named from the *hemp* which once grew there abundantly.

HEDGERLY (properly *Hedg-ley*) is simply "enclosed land."

HEDSOR. The termination *over* contracted into *or* is most common in Danish names. *Hedda* was probably a Dane, and *Hedda's over* would mean his residence or estate. The name does not occur in Domesday Book, though it dates from an earlier period.

* Romanzen, No. 3.

HITCHAM means village by the brook. The same element occurs in *Hitchenden*, the proper name of the picturesque parish which bounds that of Wycombe on the north. The late proprietor of that place, Mr. John Norris, performed the curious feat of transmuting it into *Hughenden*, a name utterly impossible to be pronounced by Saxon lips, and in every respect nondescript and unmeaning. The name was indeed occasionally spelt with *u*, as *Hutchenden*, and *Hugenden* (in which the *g* was soft, and not differing really from *ch*) but the guttural *gh* is quite unknown and inadmissible in the Anglo-Saxon language, common though it is among our Celtic neighbours of Wales and Ireland. *Hitchen* is thus discovered to be the original name of the stream which joins the Ouse on the Oxford Road of Wycombe, and is identical with that of the river on which the city of Winchester stands—the Itchen.

HORSENDEN is *Horsa's town*. Horsa was an undeniable Saxon, as every schoolboy knows.

IBSTONE. Ibstone is properly spelt *Hibe-stanes*, meaning the high stones which here bounded the counties of Buckingham and Oxford.

ILMER. This name is properly spelt *Eel-mer*, and means Eel-marsh. If our Society numbers any fish-fanciers, perhaps they can inform us how it happens that the eel, once so plentiful in our upland valleys, is now no longer to be found? I suppose that as our marshes have been drained, the mud on which the eel fattens has disappeared; and as the stream grows cleaner, the eel can no longer find feeding ground. The muddiest rivers in Europe produce the best eels. In Domesday Book several Chiltern parishes (West Wycombe, Hitcham, &c.) are rated to produce as many eels as those on the river Thames (Taplow, Marlow, Eton, &c.).

ISENHAMPSTEAD, or ISELHAMPSTEAD, is the name of two adjoining villages, called for distinction Iselhampstead Chenies and Iselhampstead Latimers, and now better known by these distinctive epithets than by their native names. *Isen* or *Isel* means river, and is one of a very large family of names of Celtic stock, signifying the same thing.

KIMBLE. This is properly spelt *Kine-bell*. Whether this parish was distinguished for possessing a church bell before others, and received this whimsical name in consequence, I cannot say; but I know of no more certain explanation. To say that Kimble derives its name from the fabulous King Cymbeline, or Cuno-beline (had that worthy ever existed) is like deriving the name of *Luther* from the *Lutherans*.

LOUDWATER. Loud, lude, lade, lede, lide, with several other variations, mean *channel* or *course* of water. "The Lyde" of Bledlow is a curiosity well worth visiting for the geologist.

MARLOW. Mar has already been explained to be equivalent to *moor* or *marsh*: the name means precisely the same as Marston, Merton, Moreton, &c.

MEDMENHAM, more properly *Medenham* or *Meydenham*, means *place of horses*. It is not generally known even among antiquaries, that *meyden* is one of the numerous Saxon names for horse, and that Maidenhead signifies Maidenhythe or Horse-wharf; between which place and other parts of the neighbourhood trade was carried on by means of horses. The ancient inn sign of the Maidenhead was probably represented originally by a horse's head. In the same way are to be explained numerous local names like Maiden Castle, Maiden Camp, &c., which occur in many parts of the country.

MISSENDEN means, so far as I can make out, *dirty town*.

PENN is a Celtic remnant, and perhaps the purest form of any element found all over Europe, signifying a high hill.

E. J. PAYNE.

(*To be continued.*)

REASON IN ANIMALS.—Schiller puts the following into the mouth of a Swiss peasant, in the play of *Wilhelm Tell*:—

And brutes have reason, too;
We know that well, who rise to hunt the chamois;
The cunning creatures, when they go to feed,
Put some one up on guard, who cocks his ear
And pipes a warning when the sportsmen near.

E. J. P.

On the Destruction of Birds.

[The following forms an admirable pendant to Mr. Marshall's article in our last; and we trust that it will tend still further to increase the good opinion of "our feathered friends," which is happily growing up amongst us.—ED.]

IN bygone days, thousands of acres of furze and underwood furnished happy homes for many a bird, and the sparrows revelled in the then prevalent thatched buildings; and herein we have something that partly justified, at that time, the war of extermination declared against birds; but now, times are changed. The forest and the common are gone, so are the thatched buildings: while the hedges are grubbed, and the poor birds driven into a very limited space. The parks and shrubberies, the church tower, and the chimney top, are the only places left in which the feathered tribe may build and rear their young: while, on the other hand, their mortal enemy, man, is ever anxious to play the sportsman, and practise on the poor remnant that is left. Hence the very proper cry against the destruction of small birds, and of the good they do in keeping under the insects, whether caterpillar, grub, or fly, which destroy crops of fruit and corn wholesale, and increase as their foes decrease.

When, four years ago, I came to my present residence, the shrubberies teemed with the feathered tribe, in consequence of the encouragement of birds by my predecessor. Wanting fruit, I declared war against the birds; "from early morn to dewy eve," there was I with my gun, till I reduced my supposed enemies so much that my garden was as still as the grave, except when I chanced to walk there: when some Sparrow or Finch would give the warning to his mates, for birds and beasts can talk to one another as well as my readers can; indeed, the language of bird and beast is now so familiar to me that I can always tell pretty well "what's up"; but more of this anon. The gooseberry trees put forth a goodly promise, and I looked forward with hope:

but a few weeks more, and the caterpillars came rapidly; the leaves disappeared from each tree in succession, the fruit shrivelled, and notwithstanding I tried lime, and salt-and-water, the caterpillars finished them off, and then, dropping from them, took up another form of existence. Then came chaffers in their turn, and instead of songs I had plenty of buzz. The cabbages were eaten up by the green caterpillars, and the beans and roses by aphides. I determined to alter my tack for another year by vowing never wilfully to destroy another bird about my ground; and I have had my reward. I have not had mischief from the grub and caterpillar tribe for the three last seasons; I have plenty of company and plenty of song. My plan is to procure some of the smallest shot, and with this shoot flying, just as you find the birds have caught the flavour of the fruit you wish to preserve; you will soon find that they can confabulate; and if you pay attention, you may soon understand their language as you slyly attempt to repeat the warning. Like boys, they will try it on a short time, but finding you are in earnest, the fruit will remain unmolested on the trees, and your conscience free from the thought of having destroyed a friend. But leave the fruit unguarded, and a combined attack is sure to follow. This is all settled in a council of birds; for they, like an attacking army, know that scouts are necessary, who give the alarm on the least appearance of danger.

Of the good birds do in the destruction of noxious insects a few anecdotes will suffice. One day seeing a cock Sparrow actively employed about fifty yards from me, near a large stone in the road, I was curious to know his business. By the aid of a small telescope I brought him close to my eye; he had a large cockchaffer, and this he took up and dashed with all his might against the stone. I saw part of the chaffer's mailed coat fly off at every blow, and the soft body, when wholly divested, was borne off as a choice morsel for the Sparrow's young. I then went and examined the fragments; they consisted of the broken wings and shield of the luckless chaffer!

This summer just opposite a window, a pair of Sparrows have hatched successive broods under the shelter of a broken slate; morning and noon are the pair busily engaged in supplying their hungry family with food, and as they pause and carefully look round before they enter, I am enabled to see that their beaks are crammed with what are familiarly called "Daddy long-legs," and other flies. In March last, when the snow lay thick and long on the ground, my attention was directed towards a tapping just outside the room window near where I stood. Peeping through the half-drawn blind I saw a Blackbird with a large garden snail, which he was busily engaged in smashing against a large stone. By repeated blows the shell was removed, and the snail soon became a choice feast for the sorely-pressed bird. Just after my park was mown it was found to be unusually full of new colonies of ants, their hills raising great impediments to the operations of my mowers. The hay being carried the rooks came for several days and seemed extremely busy. I was curious to know what they were after; and on searching I found the anthills pecked open and destroyed; the eggs were devoured, except in a few places of long standing, which formed fortresses defying all attacks. Some amateur sportsman, tempted by a good shoot from the road, gave warning to my friends to quit, since which they have not visited me. Partridges are real farmers' friends; their food, when young, consists wholly of insects. Small birds are evidently on the decrease, and many birds formerly known in this district, as the White or Screech Owl, and the Brown Owl, are seldom seen; whereas 50 years ago there was not a barn or steeple without its inhabitants, and nightly were they seen flitting silently round the fields in pursuit of mice. The numerous flocks of Pigeons that formerly visited the beech woods of this locality each winter have disappeared. One thing is clear,—the unlimited destruction of birds will assuredly hand us over to a worse enemy in the shape of aphides, grubs, and flies.

HENRY GIBBONS.

Loxboro' House,
Bledlow Ridge.

Proceedings of the Society.

THIRD SUMMER SESSION—1867.

FIRST RAMBLE, MAY 14.—On this occasion Hollow Lane was visited; the attendance was but limited, owing, doubtless, to the inclemency of the weather. The Secretary exhibited specimens of the Fly Orchis (*Ophrys muscifera*) from Quarry Wood, near Marlow; and of the Early Spider Orchis (*O. aranifera*), sent by Mr. Ulyett, from Folkestone. The usual spring flowers were noticed in the lane, as well as the Blood Beetle (*Timarcha lavigata*). Much dissatisfaction was expressed at the alterations which have lately been made in this interesting locality, the hedges having been lowered in a most unsparing manner. In returning across the fields towards the Cemetery, a very large fungus, *Polyporus squamosus*, was observed growing on the trunk of an old ash tree.

SECOND RAMBLE, JUNE 4.—Heavy showers in the earlier part of the day doubtless intimidated many from accompanying the Society on this excursion; those present proceeded to Marlow Road Station by the 3.50 p.m. train. They then walked along as far as Cores End, the Great Celandine (*Chelidonium majus*) being noticed by the way; after which they retraced their steps, and visited the gravel-pit at Well End, the President enlivening the walk by an account of his recent excursion into Devonshire and Cornwall. On arriving at the pit, the Secretary directed especial attention to several plants which are, in our district, almost confined to this locality; among them were the Soft Knotted Trefoil (*Trifolium striatum*), the Subterranean Trefoil (*T. subterraneum*), the elegant Bird's-foot (*Ornithopus perpusillus*), the Spring Vetch (*Vicia lathyroides*), the Trailing S. John's Wort (*Hypericum humifusum*), the Knawel (*Scleranthus annuus*), and the Buck's-horn Plantain (*Plantago Coronopus*). Specimens of most of these having been collected, the President pointed out traces of the action of water and that of ice. Various plants

were noticed in returning to the station, whence the members returned by the 6.3 p.m. train to Wycombe, pleased with their ramble, and regretting that others had not shared in their enjoyment.

[The continuance of wet weather caused the postponement, and eventually the omission, of the Rambles fixed for July 13th and July 30th respectively; while that arranged for August 20th was postponed until August 25th.]

THIRD RAMBLE, AUGUST 25.—Owing to a slight want of punctuality in the time of starting, the Society on this occasion was divided into two sections; one, under the direction of the President, proceeding to Totteridge, in accordance with previous arrangements; the other, accompanied by the Secretary, preferring to visit Downley. The former slowly wended its way along the Totteridge road, examining every bank, and capturing with the net many interesting insects. The President directed attention to the Turnip Fly (*Haltica nemorum*), one of the *Halticidæ*, a great pest to the farmer. Various other Coleoptera and Diptera were taken, each receiving a share of attention. Several members gathered from the hedge specimens of the curious vegetable excrescences produced on leaves by the puncture of the ovipositor of the Gallfly. The fungi at Totteridge Green and Wood were examined, and specimens of the Puffball (*Lycoperdon Bovista*), Mushroom (*Agaricus campestris*), and Chantarelle (*Cantharellus cibarius*), were gathered. Totteridge Green is one of the localities in the district in which the Henbane (*Hyoscyamus niger*) is permanently established. Towards the close of the evening the members returned by the lane leading down to the London road; the conversation throughout the walk having a general or special bearing upon subjects connected with natural history.

The Secretary and party proceeded to Downley; in the corn-fields on the way were noticed the pretty Toadflaxes (*Linaria spuria*, *L. Elatine*, and *L. minor*), with the Hemp Nettle (*Galeopsis Ladanum*), Knotted Bur Parsley (*Torilis infesta*), and other plants. A white-flowered variety of the Field Thistle (*Carduus arvensis*) was gathered near Plomer Hill. From Downley the members

proceeded to the Hughenden Woods, where the great number of fungi was very remarkable: among those observed were *Agaricus* (*Clitocybe*) *giganteus*, *Boletus edulis*, *Russula fragilis*, and *Cantharellus cibarius*: while the presence of *Phallus impudicus* was betrayed by its disagreeable odour. The Winter-Green (*Pyrola minor*), just out of blossom, and the Lady's Mantle (*Alchemilla vulgaris*), were seen in the woods; and the elegant fronds of the Lady Fern (*Athyrium filix-femina*) were much admired. The Deadly Nightshade (*Atropa Belladonna*) still remains in its old locality: the plant has this year attained the height of about eight feet, and was covered with the lustrous purplish-black berries. The members returned home at about 8 p.m.

FOURTH RAMBLE, SEPT. 12.—Arrangements had been made for a ramble to the Hughenden Woods, but owing to the very limited attendance, and a slight confusion in the time and place of meeting, it was considered better to proceed to Green Street. The President's net was in great requisition; and much interesting entomological information was given by him. The various wild flowers which abound in Green Street were noticed; conspicuous among them being the Autumnal Gentian (*G. Amarella*) with the larger form, *G. germanica*, Willd., the beautiful fringe of the corolla being much admired. The members returned to Castle Hill at 5 p.m., where they were joined by many who had not accompanied them. Tea and coffee were kindly provided by J. Edwards, Esq., at whose invitation the subsequent meeting was held. The members then walked about the grounds, the site of the old castle being explored, and a short description of it given by Mr. Payne.

THE ANNUAL GENERAL BUSINESS MEETING then commenced, the President, the Rev. T. H. Browne, taking the chair. The Secretary opened the proceedings by reading the following

ANNUAL REPORT.

"Let me not be considered to be encroaching on the province of our esteemed President, when I commence my report by quoting the words with which he opened his address at our Annual Conversazione on April 30th last: I merely echo his sentiment in his own words when I say that 'I think we have reason to congratulate ourselves upon the present condition

and future prospects of our Society.' We now number sixty-five members, of which number twenty are ladies, and forty-five, gentlemen; eleven are resident at a distance beyond our radius of five miles, while the remainder live within it, although several are not inhabitants of the town. In 1865 we numbered but thirty members; last year we raised our list to forty-four; so that it is plain that the interest taken in our Society is increasing, while we may now consider it firmly established, this being its third year of existence.

"Subject to the consent of the members, I would propose a slight alteration in the wording of our third rule, by which the annual subscription becomes due upon the first of January in each year. As we have followed the example of other Societies, and divided our year into two Sessions—a Winter Session, and a Summer Session,—it seems to me that we might with propriety so arrange our subscriptions that our year might include a Summer and Winter Session, each complete: instead of embracing as at the present time, a portion of two Winter Sessions in one year. This difficulty might easily be obviated by appointing May 1st as the day on which annual subscriptions should be payable.

"Our proceedings during the past year, ending on April 30th last, may be thus briefly summarised. During our Summer Session, but three Rambles were taken—to Dane Garden Wood, Hollow Lane, and West Wycombe,—the very wet weather which then prevailed having prevented the accomplishment of a larger number. The attendance at these was but small. Seven Evening Meetings, besides the Annual Conversazione in the Town Hall, were held during the Winter Session: at which the following papers were read:—

- * On Incredulity with respect to Geological Facts MR. ULLYETT.
- * Additions to the Flora of Wycombe.....THE SECRETARY.
- On British Reptiles (communicated) MR. W. R. TATE.
- On Diatoms and Desmids (two papers) THE PRESIDENT.
- On the Cave at Brixham, Devon (communicated)..REV. W. H. PAINTER.
- On the Mammalia of High Wycombe (communicated) MR. ULLYETT.
- On some Resemblances between Plants and Animals
(communicated)..... R. HOLLAND, ESQ.
- On Toadstools (communicated).....W. G. SMITH, ESQ.
- * On the Pleasures of Moth Hunting (communicated) MR. ULLYETT.
- A Geological Paper (communicated).....EVAN HOPKINS, ESQ.
- * On the Destruction of Birds T. MARSHALL, ESQ.
- * Annual Address THE PRESIDENT.
- On Buttercups THE SECRETARY.
- On the British Tits (*Parinæ*) (communicated) R. B. SHARPE, ESQ.

It is gratifying to be able to state that each of these Evening Meetings was well attended. Five of the above-named papers (marked thus *) have been published in full in the Quarterly Magazine of the Society, and a brief summary of the remaining has also been given. At all the Evening Meetings there has been an exhibition of objects, to which each has contributed according to his or her ability, and discussions on various subjects have occurred. I must not omit to mention that our local Flora was increased by seven Flowering Plants.* Mr. Ullyett, also, shortly before his departure, added two Butterflies to the list of those of our neighbourhood—one, the Brown Fritillary (*Argynnis Aglaia*), which had previously been taken on Marlow Common; the other, the Brown Hairstreak (*Thecla Betula*), quite new to the district. This will show that, as a body, we have not been idle: at the same time, there is yet ample room for discovery and investigation. Before quitting this subject, I beg, in the name of the Society, to tender our best thanks to those ladies who so kindly presided at the tea with which our Annual Conversazione commenced. Although their kindness has not been overlooked, it has not hitherto been acknowledged. We are also grateful to the many friends who lent objects for exhibition on that occasion, as well as to those who assisted in arranging them.

“As it was felt that we were mainly indebted to our late Secretary, Mr. Ullyett, for the organisation of the Society, a subscription was raised among the members for his benefit, with which a microscope was purchased and presented to him.

“I will now proceed to lay before you a short statement in connection with the Society’s Magazine, first directing attention to our Cash Account. On April 30th last, I had the sum of £5 14s. 5d. in hand, after all expenses for the year had been paid: and I have since received £1 12s. 6d., while £3 5s. is still due, so that we may consider our balance to amount to £10 11s. 11d.

“At the General Business Meeting held on May 1, 1866, it was resolved that a Quarterly Magazine of Natural History should be established in connection with the Society. The reasons for this were then fully entered into, and need not now be dwelt upon: suffice it to say that the first number appeared in July 1866, that five numbers are now before the public, and that the magazine has been favourably reviewed in various periodicals and newspapers. Of course, the idea that our magazine would be financially a success was never entertained; works depending chiefly upon local support and appealing to but a small class of readers, seldom, if ever, pay; but a hope was felt that it might possibly just cover its own expenses. Such, however, has not been the case. (I must not omit to mention that Mr. Butler very kindly offered to take upon himself the responsibility of the first four numbers.) When I ascertained positively that a loss would occur, I called a meeting of the Committee (on March 14th ult.) and laid the matter plainly before them,

* See p. 65.

stating that I feared a loss of between £2 and £3; but at the same time directing attention to the balance at the Society's disposal. After a long discussion, it was decided that the magazine should be continued, it being felt that the Society's funds could not be employed in a more appropriate manner: while it was also resolved that the deficiency arising from the first four numbers should be supplied to Mr. Butler from the funds of the Society. This deficiency will, I believe, amount to £2 16s. 9½d. when all subscriptions are paid, but of these £3 0s. 6d. is still unpaid. May I therefore urgently request that our friends will, as soon as possible, pay the sums due for magazines? Of the merits of the magazine it is not for me to speak: others, whose opinions are of considerable value, have alluded to it in terms of praise: and the list of subscribers is on the increase. If our members would push its circulation with a little more energy, we should doubtless have little or no deficiency at the end of another year. Our pages have been well supplied: in fact, each number has announced the unavoidable postponement of several communications. Stating, in round numbers, our loss on Nos. 1-4 as £3, the funds of the Society will still announce a balance in our favour of £7 9s. 5d.

"I will now conclude by thanking you for the very kind support you have given me since I have filled the post of Secretary. Although an unworthy successor of Mr. Ullyett, whose general information we all valued, I have endeavoured to the best of my ability to advance the Society's interests, and, I trust, not altogether without success. That we may year by year enter more into the study of the wonders around us is my earnest wish: each is a line in the great book of Nature, that book which is 'more interesting than all the books, save one, that ever were written upon earth.'

"I now resign into your hands the Secretaryship, and will ask you to proceed with the election of officers. Those now retiring are—Rev. T. H. Browne, President; R. M. Bowstead, M.D., T. Marshall, Esq., F. Wheeler, Esq., Committee."

"JAMES BRITTEN, Hon. Sec."

John Parker, Esq., proposed, and Mr. Butler seconded, that the Secretary's Report be accepted: and that the alteration in Rule 3, suggested by him, be adopted. Carried unanimously.

John Parker, Esq., then proposed the re-election of the Rev. T. H. Browne as President of the Society, remarking that no one better could possibly be found to superintend its affairs. Seconded by Mr. Britten: carried unanimously.

Mr. Butler, in a complimentary speech, proposed that Mr. Britten be re-elected Secretary. Seconded by Miss Chandler: carried unanimously.

The Secretary proposed the re-election of the Committee: Dr. Bowstead, T. Marshall, Esq., and F. Wheeler, Esq. Seconded by Mr. Tottle: carried unanimously.

The President, in a brief address, acknowledged the flattering terms in which he had been re-elected: and made a few remarks relative to the desirability of forming a Museum in connection with the Society.

The formal business of the evening being concluded, an inspection of the objects exhibited ensued. The President showed several entomological specimens, including the Clouded Yellow (*Colias Edusa*) taken at Wycombe five years ago, and referred to its recent reappearance in the district. Living specimens of many local wild flowers were on the table, including the Great Burnet Saxifrage (*Pimpinella magna*) new to the district, Cat-mint (*Nepeta Cataria*), Calamint (*Calamintha officinalis*), &c.; plants of the Grass of Parnassus (*Parnassia palustris*), and Dwarf Centaury (*Erythræa pulchella*), from Liverpool, were much admired. Miss Chandler brought two fasciculi of dried plants: and dried specimens of the small, but rare, Waterworts (*Elatine hexandra* and *E. hydropiper*), and *Cyperus fuscus* were shown by the Secretary. A short address, "On the Stomachs of Insects," was given by the President in the course of the evening: those of the Beetles, Cricket, Mole Cricket, and Grasshopper being selected for illustration. A vote of thanks to J. Edwards, Esq., and Mrs. Edwards, for the kind reception given to the Society, brought a very pleasant meeting to a close.

The following from Mr. Ulyett, in acknowledgment of the microscope presented to him by the Society, has been received by the Secretary:—

"S. Mary's Schools, Folkestone,

"September 20th, 1867.

"DEAR SIR,—Please to convey to the members of our Society my warmest thanks for the valuable present they have forwarded. They could not have chosen any thing more useful to me, and it will always serve to remind me of the pleasant rambles and conversaciones I enjoyed in their company while I was at Wycombe. I heartily wish the Society a long continued life, and that the success now attending it may never decrease. I hope ere long to hear that they have established a Museum in the town.

"Believe me, my dear Sir, yours faithfully,

"HY. ULYETT."

Books Received.

A Summary of the Occurrences of the Grey Phalarope in Great Britain during the Autumn of 1866. By J. H. Gurney, Jun. (London: Van Voorst.)

This is a very neatly got up little pamphlet, and will prove exceedingly interesting to the ornithologist, especially to him who makes our Birds of Passage a favourite study. *Phalaropus lobatus* is a northern bird, and visits

England only when the approach of winter renders its own clime too inhospitable. The author of the Summary has taken considerable pains to get together all the notices he could of its occurrence last autumn in various parts of the country, and has been so successful, that, however scarce it may have been deemed fifty years ago, it deserves now, we should think, to have its name taken off the list of rare birds. The nearest locality to us, noticed in the book, is an eyot of the Thames, not far from Pangbourne, where one was shot; but we doubt not others might have been seen still nearer; those sedgy willow eyots that occur so plentifully in various parts of the river must harbour a great many birds, and would prove a world of discovery if well examined. Our readers will recollect that it was by one of them that the Little Bittern (*Ardea minuta*) was taken a year or two ago by one of our members. We cannot help regretting that the pamphlet bears such ample testimony to the general tendency to shoot everything that is at all rare; the great majority of the specimens seen were killed, and we must protest particularly against the conduct of the gentleman who shot eighteen out of one flock; we doubt whether the bird will be so common this year. Its natural tameness is much against it, as is evident from the number knocked down with hand weapons, and maimed with missiles from those arch-enemies of animals in general—boys: we trust the school-boy who “stoned” one at Stokes Bay will get a few lessons in Natural History. A very nice map accompanies the work.

The Naturalists' Circular, August and September, 1867. (London: Henry Hall, 56, Old Bailey, E.C.)

This little magazine, an enlarged form of one which has long been known among amateur naturalists, bids fair to take rank among the most useful of our serials. Its specialty is an Exchange List, in which appear the names and addresses of those naturalists who are willing to assist their brethren in the collection of the various objects of their study. Short practical articles, as those on “Lamps for the Microscope,” “Larva-Rearing,” &c.: papers on matters of general interest to the naturalist, and notes and queries, make up each number. The *Naturalists' Circular* seems likely to take the place of the lately-defunct *Naturalist*, but we trust will not share its untimely fate. Its price is 2d. monthly.

Country Life: A Journal of Rural Pursuits and Recreation. (London: 10, Bolt-court, Fleet-street, E.C.) Price 2d. weekly.

We have received No. 4 of this new periodical; and, if we may take it as a specimen of the whole, can give it our sincere recommendation. It is, as its name implies, a paper for dwellers in the country; the gardener, the angler, and, what more immediately concerns us, the naturalist, will find each of their pursuits duly attended to. The principal article in the number before us is one on “The Cholera Fungus,” by Mr. M. C. Cooke, a well-known authority on fungi in general. He carefully weighs the evidence for and against, and thus concludes: “The crime is not proved against the prisoner at the bar, and he is acquitted. Let us hope that the experiments will be continued, and that in the meanwhile no absurd cry will be raised about a ‘cholera fungus.’” Other interesting papers are those on “Fishermen’s Flies,” “Jottings by the Way,” and “Poultry-keeping:” “The Garden” is well looked after.

The Entomologist, Nos. 44 and 45.—There is no falling off in the interest of this periodical. Several good descriptions of larvæ are to be found in these two numbers, and a lengthy note on the “Hop Insect.” We commend it to the notice of all our entomological readers.

Correspondence.

We shall be glad to receive articles on any natural objects, the preference being always given to such as have a local interest. Notes on the popular names of, or traditions concerning, Animals or Plants, or on any subject connected with Natural History, will be welcome.

"CLERKS OF THE WEATHER."—(See p. 106).—Mrs. Woollams writes as follows:—"I think I named *three* Leeches to a pint and a half of water. I venture to remind you of this, as it is somewhat essential; for not only is that number sufficient for the quantity of water, but a larger number is apt to puzzle beginners, as they do not always rise and fall *together* to the moment. My experience is not of *five*, but of *fifteen* years, so I trust you will receive it with confidence."

ON PRESERVING THE COLOUR OF DRIED FLOWERS.—(See p. 121).—I have been asked to communicate the manner of fixing the colour in the mounted groups of flowers which I sent over for the Annual *Soirée*. Some five years ago, a friend, who had been travelling in Norway, shewed some specimens which he had brought home to a dear child, who commenced experimenting to preserve the colour in drying. Ultimately she found the application of a heated flat iron the best mode of proceeding. It was her practice to pick the flower in pieces for the purpose of more evenly preserving the true proportions, and then, with the perfect flower before her, to make it up again. The medium used in fixing it on the card was isinglass in solution. The specimens sent to Wycombe were only a few of those produced; the groups of wild flowers, which passed into the hands of valued friends, being especially natural.

Henley. H. STUBBS.

THE DUKE OF BURGUNDY (*Nemeobius Lucina*).—Mr. Ulyett, in his paper on the Wycombe Butterflies, page 113, remarks that the larva of the "Little Duke of Burgundy Fritillary" (*Nemeobius Lu-*

cina), is said never to have been found in England. Mr. U. will therefore probably be interested to know that I have taken both eggs and larvæ somewhat freely in this neighbourhood, and have bred the perfect insect. Some few years since, I happened to be in a sunny field embosomed in beech woods, in this parish, where numbers of this pretty little butterfly were flitting to and fro, and I determined to have a hunt for the larva. I had read in Westwood's *British Butterflies* that the larva fed on the Primrose (*Primula vulgaris*), and so to work I went, carefully examining the leaves of each primrose plant, but with no success. I noticed, however, that the field was covered with numerous plants of the Cowslip (*Primula veris*), and to these I immediately directed my attention. I had only examined two or three plants, when at the back of the very lowest leaves among the long grass, close to the ground, I found some small hairy larvæ and a number of little white eggs, resembling those of *Arctia menthrasti*, laid singly or in small clusters. These I took home, and in a few days they hatched; the young larvæ fed up rapidly and soon assumed the pupa state, and the following year produced the perfect insect. I subjoin a description of both larva and pupa for the benefit of your readers: Ground colour, dingy olive. Central dorsal line, blackish or very dark olive, much darker at the centre of the segments. Sub-dorsal lines slanting, dark olive, dotted posteriorly on each segment by a dull yellow spot. On each segment between the dorsal and sub-dorsal lines a largish orange tubercular spot, surmounted by a tuft of reddish orange hair. Between

the subdorsal and spiracular lines a similar row of smaller spots and tufts. Spiracular line, indistinct anteriorly olive, posteriorly dull yellow. Spiracles, black. Head, reddish yellow. Belly, dirty greenish olive, destitute of markings. Hatched the beginning of June. Full fed, middle of July. Pupa pale straw colour. Along the centre of both thorax and abdomen a double row of largish black spots; on each side three similar rows, the intermediate row much smaller than the other two. Upper border of wing-cases black. On the head or extreme end of the thorax two transverse black bands. Suspended by a thread across the junction of the thorax and abdomen. In form, colour, and general appearance, closely resembles the pupa of *M. Artemis*, the "Greasy Fritillary." In hot summers there is a second brood of this butterfly in September. The year before last I fed up a batch of larvæ in July, and every pupa emerged in September.

H. HARPUR CREWE.

The Rectory, Drayton Beauchamp, Tring.

[The larva has previously been recorded from Bramham Moor, Yorkshire, feeding on *Primula veris*. See *Naturalist* i. 125. ED.]

WHITE SAND MARTIN. — On the 20th of August last a White Martin was shot by Mr. F. Wheeler, on the Thames, near Marlow Road. The specimen is, apparently, an Albino, and of the species Sand Martin (*Hirundo riparia*). The length and general appearance agree with the figure and description in Bewick. The colour is almost entirely white, but in one or two places there are shades of a brownish tint. I am informed that there are in the British Museum many white varieties of English birds; indeed, we have, most of us, seen, at times, partially white Sparrows, Starlings, Black-birds, &c.: but I have never before seen a White Martin, and I imagine such an almost *purely* white variety of any English bird is seldom seen as in the specimen shot by Mr. Wheeler. — T. MARSHALL.

THE CLOUDED YELLOW (*Colias Edda*). — This rare and beautiful Butterfly has this year again appeared in our district. The only specimens we had hitherto seen from the neighbourhood of Wycombe were those in the collection of the Rev. T. H. Browne, by whom they were taken about five years since. Nine have been seen this year by different individuals, within our radius of five miles; and one was noticed near the Maidenhead station. The fact that only males have been observed in these instances suggests that they may have been in some manner introduced. The Clouded Yellow seems to be of more frequent occurrence this year than is usually the case: Mr. Ulyett states that it is very plentiful at Folkestone. He adds, "I took a very fine specimen of the rare variety *Helice* in August last, a few miles from here. Although not in your locality, this note may prove interesting to the entomologist."

PHOSPHORIC CENTIPEDE. — Coming home rather late one night last August I saw on the Marlow Hill several of what I passed by as glowworms; but on stooping down to pick up one it moved away, and left a track of light behind it, both among the herbage and on the hard road. On seizing one, and boxing it, I found it to be a centipede. My fingers were covered with the phosphorescence after handling it, as if I had been rubbing them with lucifers. Can you tell me the scientific name of this creature?

N.

[No doubt it was *Anthronomalus longicornis*, figured in Wood's Nat. Hist., vol. iii. p. 693. — ED.]

THE WHEATEAR. — I have noticed this year during the latter end of March, the occurrence of the Wheatear (*Saxicola Euanthe*). This species is not common in this neighbourhood, but in one walk I noticed four instances of it. According to Jardine, it is one of the *earliest* of our summer visitants.

T. MARSHALL.

The Birds of Cookham and the Neighbourhood.

(Continued from page 128.)

BY R. B. SHARPE.

Sub-fam. ACCIPITRINÆ.

Accipiter.

8. *Accipiter nisus*. The Sparrow Hawk.

THIS bird is not so often observed as the Kestrel, but is still of common occurrence, and breeds in the Duchess of Sutherland's woods at Cliefden. I cannot from my own experience justify the trivial appellation of *Sparrow-hawk*, for I think that in most instances (especially as regards the females), it preys upon Blackbirds, Thrushes, Starlings, and Larks, while Mr. Briggs, who has had much experience in Cambridgeshire and at Billing-bear,* says that it justly incurs the animosity of the keepers by the ravages it commits among the young Partridges and Pheasants. Nor is its attack confined to the *young* bird, for Mr. Burton, of Wardour Street, London, tells me he once marked a covey of Partridges to the other side of a small ridge, and having crept unobserved to within range, was preparing to flush them, when a Sparrowhawk darted down, seized one of the birds, and would have carried it off, had not a shot terminated his career. The present species gets remarkably bold when impelled by hunger, and has been known to carry off game in the face of the sportsman, several instances also being recorded of its having dashed through glass windows to seize cage-birds. These hawks often pursue flocks of Starlings, and Mr. Briggs and I have twice been witness to a chase. The first time was on the 2nd of June, 1867, when we were both in my father's garden, and were first attracted by a commotion among the Swallows and Martins above our heads. Looking up, we perceived a Sparrowhawk sailing across towards Cliefden Woods, surrounded on all sides by the screaming *Hirundines*. Presently a flock of twenty or thirty Starlings hove in sight, when the hawk darted off towards them,

* This place was in the first part of the paper written Bulling Bare in error.—R. B. S.

and both parties wheeled round and round, higher and higher, each apparently striving to get above the other, but eventually the Starlings succeeded, for the Hawk gave up the chase, and bore off in the direction of White Place, till he became finally lost to sight. The other time when we were witnesses to the attack of a Hawk was in the middle of last September, but on this occasion the encounter did not end favourably for the Starlings, as the bird of prey dashed out of the woods into the midst of the flock and struck down one, which fell headlong towards the ground, but before he had fallen twenty yards, the Hawk shot like lightning, caught him up, and bore him off to the woods. We were close observers of the fray, which took place immediately over Formosa. Mrs. De Vitre possesses a fine old female, and it is curious that of the specimens shot near Cookham within the last five years, I have not seen one male bird. The latter is of more secluded and retiring habits than the female, and seldom ventures out from his strongholds, leaving his larger and more powerful mate to run the risk.

Sub-order II. ACCIPITRES NOCTURNI.

Fam. STRIGIDÆ.

Sub-fam. SYRNIINÆ.

Syrnium.

9. *Syrnium aluco.* The Tawny Owl.

Cookham is one of the places where this species of Owl, now becoming scarce in England, can still be found. In the woods of Hedsor and Cliefden, and the opposite grounds of Formosa, the Tawny Owl pursues his noiseless flight and is heard hooting in the stillness of the summer night. I can quite understand this species feeding on fish, as it exhibits in confinement great partiality for water, and the birds in the Zoological Gardens, Regent's Park, seem to delight in their bath, standing in the trough and splashing the water all over them. When thoroughly soaked they look most comical with their immense eyes, which seem larger than ever when the feathers round them are all wet and flattened.

Otus.

10. *Otus vulgaris*. The Long-eared Owl.

This bird is very rare at Cookham, but has nevertheless been observed by Mr. J. Ford, at Dropmore, where there are some fir trees, which are a favourite resort of the Long-eared Owl. The species is common in some parts of Cambridgeshire, whence several specimens have been sent, both to Mr. Briggs and myself, and where the bird often came under his observation. Mr. J. Ford had a young bird sent him from Norfolk, which lived for a long time in confinement, till it met with an untimely death at the claws of a cat.

11. *Otus brachyotus*. The Short-eared Owl.

Mr. Darby shot a specimen of this Owl near Cockmarsh a few years ago, which was preserved by Mr. J. Ford, of Cookham. Its occurrence so far south is rare.

Sub-fam. STRIGINÆ.*Strix*.12. *Strix flammea*. The Barn Owl.

Our harmless but persecuted Barn Owl is often met with at Cookham, and occasionally visits Formosa, where it meets with an asylum. It is also a frequent visitor to White Place, and may be often heard in Cliefden Woods. I have also heard and seen it in the ivy which envelopes the tower of Cookham Church.

Order FISSIROSTRE.*Fam.* HIRUNDINIDÆ.*Hirundo*.13. *Hirundo rustica*. The Chimney Swallow.

The present species presents at different seasons of the year distinct changes of plumage on the breast, but I am at present not in a position to make any remarks about them, as I intend to make my researches the subject of a separate paper. I question very much, however, whether the old bird at the time of feeding the young on the wing (as represented in Mr. Gould's plate in *The Birds of Great Britain*) is to be found with the reddish tinge on the breast, but as my series of specimens is not yet as complete as I could wish, I must wait till next year to bring me some more,

and I shall then hope to be able to lay before my readers some more definite remarks on this species. I shall also, I hope, by that time be in possession of a more complete series of skins, so as to be able to bear out my present conjectures by the actual observation and possession of specimens. Should any of my friends find any with a deep rufous colour on the breast, I shall be glad at all times to receive them at the office of the Zoological Society, Hanover-square, London, W.

Chelidon.

14. *Chelidon urbica*. The Common Martin.

The Martin may be distinguished from the foregoing species by the white mark on the lower part of its back, which is very conspicuous when flying, and also by its mode of flight, which is always swifter and less laboured than that of the Swallow. It also generally flies high in the air, which is seldom the case with the Swallow, who skims along the ground after insects. The present species is very fond of frequenting the waterside, and may often be seen in groups of three or four together sitting by the side of the river and dipping themselves. The Martin is also very fond of dusting itself in the middle of the roads.

Cotyle.

15. *Cotyle riparia*. The Sand Martin.

There are several gravel pits and other situations near Cookham, which form suitable breeding-places for the Sandmartin, and the bird is very common there in summer. It arrives sooner than the Martin or the Swallow, and departs before them.

Fam. CYPSELIDÆ.

Cypselus.

16. *Cypselus apus*. The Common Swift.

There is scarcely anyone living in the country who is not acquainted with the Swift, or who does not welcome him as the harbinger of spring, and equally regret his departure as the sure sign that winter is approaching. The Swift is one of the latest birds to arrive and the earliest to go. It breeds under the eaves of houses in the village, penetrating far out of reach under the roof. I have taken its nest on Peterborough Cathedral, where thousands breed every year.

Fam. CAPRIMULGIDÆ.

Caprimulgus.

17. *Caprimulgus europæus*. The Common Nightjar.

As early as March 3rd this year (1867) a Goatsucker, as the bird is more commonly called, was shot at Cookham Dean, and sent to Mr. Briggs for my collection. This was considered by him to be considerably earlier than usual, and in my opinion is very remarkable, as they generally are first seen about May, which is also the date of their arrival given in John's *British Birds in their Haunts*. About Formosa they are by no means uncommon, and all round Mr. Burrow's grounds, at the Elms, they may be seen towards the dusk of the evening. They are very fond of sitting on a railing which runs across one of his fields, and as we go through the lane which skirts the bottom of it, a Nightjar often flaps over the hedge on one side and disappears over the opposite hedge on the other side of the road. Mr. Briggs says he has often seen them settle in the road, and when disturbed, fly along about a foot from the ground, making a flapping noise, but whether this is caused by the bird striking its wings together over its back or underneath its breast, he has not yet been able to determine. We have not found the Nightjar breeding in the neighbourhood, though at Billingbear Mr. Briggs tells me he frequently found the nest. I may add that the bird has been also observed by him at Formosa this year very much later than usual, as he saw them in September.

Fam. MEROPIDÆ.

Merops.

18. *Merops apiaster*. The Bee-eater.

In the summer of 1866 a Bee-eater made its appearance at Dropmore, on the estate of the Hon. G. Fortescue, and attracted the notice of Mr. Frost, the head gardener. For several days it continued on the grounds, taking up its position on a bare branch over a wasps' nest, and from this position it made short flights to catch any of the insects as they approached or left the nest. Mr. Frost, to his great credit, would on no account have the bird

molested, and did all in his power to protect it, but at last it wandered from this friendly neighbourhood, and was at once shot by some less scrupulous person.

Fam. ALCEDINIDÆ.

Alcedo.

19. *Alcedo ispida.* The Common Kingfisher.

The introduction of salmon and trout hatching on Lord Boston's estate has visibly affected the welfare of this pretty bird, for no sooner did the small fry make their appearance, than the Kingfishers found them out, and created great havoc. This, however, did not last long, for a fiery edict went forth, and the poor birds were shot down right and left by the fisherman in charge of the preserves. Up to this time the Kingfisher was by no means rare near Cookham, and used to breed regularly in the bank of the stream opposite Formosa, but since the wholesale murder of every bird that could be seen, their numbers have much decreased, although I am happy to say a few are still left to gladden our eyes and enliven the beautiful scenery in the river Thames. The note of the Kingfisher is a very shrill one, which may be represented by the words, pronounced very sharply, *t'wee, t'wee, t'wee-e-e.* When he flies, the bird always utters that note, but when frightened only gives vent to a shrill solitary sound. His ordinary flight is slow and steady, and when not alarmed, he glides along the sides of the banks of the river or up a brook, till he comes to a suitable place, generally a post or dead branch, where he settles and waits patiently until the fish come within reach, and then like an arrow dives in and brings his prey up and flies with it to a perch, where he kills it with a smart rap, and swallows it head foremost. Round Formosa the Kingfisher finds many suitable places for fishing, as there are numerous small streams and rivulets running through the estate, one of which is directly opposite the door of Mr. Briggs' cottage. Here he has often seen the birds sit for a long time, first turning their head on one side and then on the other, and keeping good watch on all sides. Suddenly like magic they are gone, a splash is heard, and the bird flies off with a fish in his beak.

(To be continued.)

Additions to the Wycombe Flora,—1867.*

OUR local Flora during the past season has been increased by four species of Flowering Plants, while many species, previously recorded for the district, have been observed in new localities. I will very briefly enumerate the more important of these discoveries.

The four new species are as follows:—

THE GREAT BURNET SAXIFRAGE (*Pimpinella magna*), was observed on September 9, by Mr. J. C. Melvill, of Trin. Coll., Cambridge, in company with myself, in the lane below the Roundabout, and between it and the Booker road. It had previously escaped notice, doubtless on account of its near resemblance to the common *P. Saxifraga*, but the difference in the root leaves is sufficiently marked. *P. magna* is recorded as occurring in two other localities in the county.

THE CREEPING SCORPION GRASS (*Myosotis repens*), grows in abundance in the large mill-pond at the Marsh Green, where I observed it on September 10. It very greatly resembles the Forget-me-not; but has smaller flowers, and also differs in other particulars. It has not been previously observed in Buckinghamshire.

THE PALE BLUE TOADFLAX (*Linaria repens*) was first sent me by Mr. Daniel Avery, of Lane End. On investigating the locality in which he discovered it, I found it growing in great abundance in fields and hedges on the other side of Lane End, towards Fingest. I traced it for some considerable distance; and it doubtless extends into the adjoining part of Oxfordshire. When we remember that Henley was the earliest recorded locality for this species, and that it grows in that neighbourhood in great plenty, it seems probable that it is generally distributed over the district between Lane End and that place. The only other Buckinghamshire locality for *L. repens* is a "hedge near the

* Read before the Society at the First Evening Meeting (November, 1867) of the Third Winter Session, 1866—67.

'Sefton Arms,' Stoke" (*Phytologist* v. 367, n.s.); where it may, perhaps, have been introduced. This species is one of our prettiest Toadflaxes, the flowers being elegantly striped with purple, and very sweet-scented.

THE PRIMROSE-LEAVED MULLEIN (*Verbascum virgatum*) I discovered in Hollow Lane on September 12. I had noticed plants which I believe to have been this species in the same neighbourhood two or three years ago, and again near Well End; but I did not then examine them sufficiently, and thought it possible that they might be hybrids between *V. Thapsus* and *V. nigrum*. The Hollow Lane plant, however, agreed exactly with the description of *V. virgatum*. It is new to the county.

Besides these four plants, which have never been previously recorded for our district, there are three others, which had been reported as belonging to it, but which, of late years, had not been observed, and these are deserving of special notice.

Of the FIELD PEPPERWORT (*Lepidium campestre*), which Mr. Gaviller found in the neighbourhood of Loudwater, I noticed a solitary plant in a cloverfield near Booker. I have never seen it elsewhere in the district, and suspect we cannot claim it as a genuine native, although generally distributed.

THE SOLOMON'S SEAL (*Polygonatum multiflorum*), recorded by Withering as growing "about High Wickham, Bucks," which I last year remarked had not been seen recently in our district, has been discovered in the Booker Woods by Mr. Avery, growing in some plenty. Mr. Edward Wheeler informs me that he believes he has seen it in the Penn Woods, a very likely locality.

THE FLOWERING FERN (*Osmunda regalis*), which has been rumoured to occur in various places, has at length been seen growing in the district. I purposely abstain from giving any indication of its locality; human nature is weak, and the Flowering Fern a great temptation; and remembering the raids made upon it in one of its best known places of growth, Burnham Beeches, I deem it well to preserve a discreet silence on the subject.

The very curious variety of the Water-cress (*Nasturtium officinale*) known as *N. siifolium*, has been seen by the stream in the Rye. This form has leaves resembling those of the Marshwort (*Helosciadium nodiflorum*), very thick, erect stems, and small flowers with a pinkish tinge. It is well worthy of notice, differing widely in appearance from the typical form; so much so indeed, that in the neighbourhood of Buckingham, where it is abundant, it is called "Brooklime," and considered as quite distinct from the ordinary Water-cress.

The Barberry (*Berberis vulgaris*) has been observed near Fingest by Mr. Daniel Avery, who also found the Columbine (*Aquilegia vulgaris*) in a wood near Lane End, in flower; it seldom blossoms with us in a wild state. The Great Dodder (*Cuscuta europæa*) was found by Miss Chandler growing plentifully on nettles near Hughenden Park. The Mezereon (*Daphne Mezereum*) was again observed in its former localities: the Bog Pimpernel (*Anagallis tenella*) and Lady's Tresses (*Spiranthes autumnalis*) on Lane End Common. The beautiful Snowflake (*Leucojum æstivum*) I had the pleasure of gathering, on May 8th, from the meadows by the Thames near Harleyford, in company with the Large Bitter-cress (*Cardamine amara*); this locality, however, is beyond our district. The Stinking Iris (*Iris fœtidissima*) I found in a small wood near Flackwell Heath; it is very remarkable that it has not been observed in any wood in our own immediate neighbourhood, as the locality would appear conducive to its growth. The Good King Henry (*Chenopodium Bonus-Henricus*) was gathered, late in the season, at Forty Green, near Penn; it has only one other station in the county.

Thus, as each year comes round, it introduces fresh objects to our notice: season by season, the naturalist finds something to engage his attention. Natural History is the one study which we can never exhaust, for the more we advance in our knowledge, the more plainly we see how much we have yet to learn.

JAMES BRITTEN.

Our Ferns.*

THERE are few pictures better calculated to arouse that love for Nature which exists in the human breast, than the sight of a rich bank of ferns. In a deep dell or a shady lane, where one has sought refuge from the "all conquering heat" of summer—where the slopes give forth to the eye a limpid greenness—there the spirit of a botanist may be, and often has been, evoked. It was among the Devonshire lanes I first fell in love with ferns, and there are probably few places in England so well calculated to produce such an effect. On the slopes of the Blackdown hills—in roads cut through the humid sandstone, mosses and ferns reign supreme all the year round, and in winter are specially beautiful. The desire to know more of these green treasures soon extends itself, and is very readily gratified: ferns are easily preserved, and the majority of them very easily cultivated; and a fern bank may be established in the garden with but very little trouble.

Ferns belong to the class of plants called *cryptogamia*, from the fact that flowers are absent from them, the fructification being developed by another method: in the same class are mosses, lichens, algæ, and fungi. Ferns and mosses belong to the higher cryptogamia, and have their mode of reproduction much more plainly apparent to the eye than seaweeds or fungi, but no flowers exist: the seeds, or as they are technically termed, the *spores*, of the former are scattered over the back of the leaf or *frond*; their mode of arrangement, and the presence or absence of a covering to them (called the *indusium*), afford good points of dissimilarity, which serve to separate them into families and genera. They reach their greatest perfection in warm moist atmospheres, and are found thus in the present day in New Zealand and similar climates, where they attain to the height of

*Read before the Society at the Second Evening Meeting (December 10, 1867) of the Third Winter Session, 1866-7.

some of our trees. In past ages of the world, England was quite as much the home of gigantic and luxuriant ferns as the country just referred to; this is attested by the innumerable fossil remains preserved in various formations, more particularly in coal.

There are now in our country between forty and fifty different species, according to the fancy or ingenuity of species-makers; some of these are very widely spread, others are only to be seen in favoured spots.

Although chalky soils are said to be not particularly favourable to their production, we possess within a radius of five miles a very fair proportion for the locality; and though we can never hope to obtain the diminutive *Woodsias*, which grow only in the crevices of mountain rocks, or the delicate and pellucid *Film-Ferns*, which delight in more humid situations, yet we are not without rarities. Sixteen species are now known to occur in our district, and probably more will "turn up" before long.

THE POLYPODIES (*Polypodium*).—Of these we have two, but one is very rare. The Common Polypody (*P. vulgare*), an ever-green fern, is found in all our woods, encircling the roots of the beech trees. In other localities it may be seen thickly covering the summits of old walls, high banks, &c.; there is a small bed of very fine ones on the left-hand side of the lane leading to Plomer Hill, and another on the bridge in Chapel Lane. The spores form bright brown patches on the back of the fronds, and usually on the upper half only; these spores have no skin or indusium over them—a mark which, taken in connection with the round clusters of spores, is characteristic of the genus. The Limestone Polypody (*P. Robertianum* or *calcareum*) is very rare, occurring chiefly in the northern and western parts of the island, and preferring calcareous soils. It has been found in one locality in Oxfordshire, and I am glad to be able to record Wycombe as one in Bucks. I found two very good specimens in King's Wood, close to Hazlemoor, but with the most diligent search, have never been able to discover any more: it may, of course, still exist in some unexplored spot. It grows to the height of little more than six inches, and is rather three-branched

in its appearance, but not so much so as an absent allied species (*P. Dryopteris*); the fronds are of a delicate green colour, and the branches beautifully pinnate, or divided at the edge.

THE SHIELD FERNS (*Polystichum*).—Of this genus we have but one species—the Common Prickly Shield Fern (*P. aculeatum*), an evergreen when growing in a sheltered situation, but otherwise the fronds die off. It is one of the most graceful of our ferns when viewed in masses, presenting, when looked at from above, a beautiful feathered appearance. Although very plentiful in most of the Gloucestershire lanes, it is not widely spread here; there are a few roots in Water Lane, and it grows thickly on a bank in the wood, not far from Hazlemoor Church. The spores are covered with an indusium *circular* in shape, and the texture of the frond is more rigid than that of any other of our native ferns. When the spores have reached maturity, the skin bursts, and the fine dust becomes dispersed by the wind to other, and perhaps far distant, localities. There is a variety called *lobatum*, much narrower in outline, and having the pinnæ stunted and lobed; it has been found here, but I do not know the spot. It is, however, merely a variety. [*P. angulare* ought to be found in the neighbourhood, though I have not been fortunate enough to see it.]

THE BUCKLER FERNS (*Lastrea*).—These ferns are known by having the indusium indented on one side, making it horse-shoe-shaped. We have three species. We can go into no wood without seeing the Male Fern (*L. filix-mas*), growing occasionally to the height of three feet. I found a curious variety of it in the Roundabout, having the pinnæ divided into two and three branches. The Spiny Buckler Fern (*L. spinulosa*), by some treated as a variety of the rare *cristata*, is plentiful in King's Wood and Whittington Park, preferring moist situations. The Broad Buckler Fern (*L. dilatata*) is not quite so common, but is to be found in both localities; it is a very robust plant, yet the frond is beautifully curved or drooping, and is seldom seen erect like other *Lastreas*. [I believe *L. uliginosa* was found in Whittington Park by Mr. T. P. Lucas, formerly resident at Wycombe.]

THE LADY FERN (*Athyrium*).—Opposed altogether in appearance to *filix-mas* is *A. filix-fœmina*, which “on account of the exquisite grace of its habits of growth, the elegance of its form, and the delicacy of its hue, claims precedence over every other British species.” It is recognised at once by these characteristics, as well as by the fringed indusium. In the deep glades of King’s Wood it makes a pleasing contrast to the more robust forms; in Whittington Park it is almost as plentiful as the Male Fern.

THE SPLEENWORTS (*Asplenium*).—These have narrow single *sori* (lines of spores) running in the same direction as the veins of the frond. The Wall Rue (*A. Ruta-muraria*) and the Common Maidenhair Spleenwort (*A. Trichomanes*) were both to be found on a wall at West Wycombe. The Black Maidenhair Spleenwort (*A. Adiantum-nigrum*) grows in several places, plentifully at Wooburn and Beaconsfield.

THE HART’S TONGUE (*Scolopendrium*).—This is an evergreen fern, delighting in moist situations, such as the banks of watercourses, sides of wells, &c., in which favourable spots the fronds will measure a couple of feet in length. The ordinary form (*S. vulgare*) has the leafy portion of the frond entire; there are varieties that divide and subdivide, but none are found here. It was formerly very plentiful on the upper bank of the stream flowing from the east end of the Park, but has since been eradicated. Now it is to be found in a few of our lanes.

THE SCALE FERN (*Ceterach officinarum*).—This, in company with the two Spleenworts before mentioned, is found only on a wall at West Wycombe: the fronds are dwarfed, thick, and of a dull green colour, the back is covered with overlapping scales. All these wall ferns are difficult to transplant, and still more difficult to cultivate: it is therefore to be hoped that they may not be exterminated for that purpose.

THE HARD FERN (*Blechnum boreale*).—A plant deriving its name from its rigid appearance: there are two kinds of fronds, barren and fertile, the latter having the divisions long and narrow. It is abundant in Whittington Park, and occurs in other of our woods and hedges.

THE BRACKEN (*Pteris aquilina*).—This exists almost everywhere, often rising in the hedges to the height of five feet. The sori lie along the edges of the divisions. If the thick portion of the stem close to the ground be cut through, it will present a rough outline of the two-headed eagle with outspread wings—hence the specific name of *aquilina*, given it by Linnaeus.

THE ROYAL FERN (*Osmunda regalis*).—This has been added to our list since I left Wycombe. I long suspected it to grow in the locality in which it has at length been found—an opinion shared in by our Secretary, and we both made several visits in the hope of finding it, but in vain. It is often called the Flowering Fern, because when the spores are ripe the plant looks as if it were in flower, but this is a deception arising from the reflection of the edges of the *pinnule*. It has been known for some time to grow at Burnham Beeches, but that is outside our district.

THE ADDER'S TONGUE (*Ophioglossum vulgatum*).—This curious fern has the frond divided into two branches, one leafy and entire, the other, the fertile one, erect and contracted, bearing the spores in its upper half. It loves humid situations. I first found it by the Thames at Marlow: it is plentiful also at Lane End.

[The Moonwort (*Botrychium Lunaria*) is reported to grow in the same neighbourhood, but I never met with any one who had found it.]

HY. ULLYETT.

The following localised list of Buckinghamshire Ferns may perhaps be of interest, as showing the extent of our present knowledge regarding those of the whole county. The English name of each species will be found in the preceding article. The localities following the initial S are in South Bucks; those preceded by N are in the North of the county. A species or locality in brackets requires confirmation.

Polypodium vulgare, L. S. Wycombe, Beaconsfield, &c. N. Near Buckingham (Mr. W. Walker).

P. Robertianum, Hoffm. S. King's Wood, Hazlemoor, Wycombe.

Lastrea Filix-mas, Presl. S. and N. Bucks.

L. spinulosa, Presl. S. Whittington Park, near Wycombe; Hazlemoor; Loudwater; &c.

L. dilatata, Presl. S. Whittington Park; Black Park, Stoke (*Phyt.* v. 367, n. s.); Gerrard's Cross (*Rev. W. Bramley-Moore*).

[*L. uliginosa*. S. Whittington Park (*Mr. T. P. Lucas*).]

Polystichum aculeatum, Roth. S. Not unfrequent about Wycombe; Chesham (*Rev. Bryant Burgess*); Colnbrook (*Mr. A. Pettigrew*); Stoke (*Phyt.* v. 368, n. s.).

β *P. lobatum*, Sm. S. Wycombe; Gerrard's Cross (*Rev. W. Bramley-Moore*); Stoke (*Phyt.* vi. 528, n. s.). N. Near Buckingham (*Mr. W. Walker*).

P. angulare, Newm. S. London Road, Wycombe (*Miss M. Vernon*); Stoke (*Phyt.* v. 368, n. s.).

Athyrium Filix-femina, Roth. S. and N. Bucks.

[*Asplenium fontanum*, L. S. Recorded on old authority as growing on Agmondesham (Amersham) Church: in all probability an error.]

A. Adiantum-nigrum, L. S. Walls and banks, Wycombe, Beaconsfield, &c.; Stoke (*Phyt.* v. 367, n. s.); Taplow (*Mr. George Stanton*); Burnham Beeches; Dropmore (*Mr. A. Pettigrew*).

A. Trichomanes, L. S. Near Marlow (*Miss M. Vernon*); West Wycombe and Bradenham; Gerrard's Cross (*Rev. W. Bramley-Moore*); Amersham (*Rev. Bryant Burgess*); Stoke (*Phyt.* v. 366, n. s.); Burnham Beeches (*Mr. G. Stanton*). N. Near Buckingham (*Mr. W. Walker*).

A. Ruta-muraria, L. S. Walls, West Wycombe, Bradenham, Amersham, Beaconsfield, &c.; between Iver and Cowley (*Mr. G. Stanton*); Langley Park (*Mr. A. Pettigrew*); Denham Bridge (*Rev. W. Bramley-Moore*). N. Near Buckingham (*Mr. W. Walker*).

Scelopendrium vulgare, Sm. S. Wycombe Park; Downley; Beaconsfield; Dinton, near Aylesbury (*Rev. J. J. Goodall*); Stoke (*Phyt.* v. 368, n. s.); Burnham Beeches (*Mr. G. Stanton*). N. Near Buckingham (*Mr. W. Walker*).

Ceterach officinarum, Willd. S. Wall, West Wycombe.

Blechnum boreale, Sw. S. Whittington Park and Hazlemoor Wood, Wycombe; Burnham Beeches; near Hampden; Stoke (*Mr. G. Stanton*).

Pteris aquilina, L. S. and N. common.

Osmunda regalis, L. S. Within five miles of High Wycombe; Burnham Beeches; on Taplow Common, *Mr. J. Rayer* (*Botanists' Guide*, i. 40); Langley Park, Stoke (*Mr. A. Pettigrew*).

Ophioglossum vulgatum, L. S. Meadows near Marlow; Whittington Park; Dinton (*Mr. C. J. Ashfield*); Latimers (*Rev. Bryant Burgess*); Taplow Marshes (*Mr. G. Stanton*); Drayton-Bauchamp (*Rev. H. Harpur-Crewe*). "In a clay field at Fulmer the spikes and leaves of *Ophioglossum* are more common than the grass" (*Mr. W. Acton*).

JAMES BRITTEN.

Ornithological Notes.

I NOTICED in No. 3 of the Magazine Dr. Rowstead's account of the nest of a Tomtit in a common watering-pot. I remember, about eight years ago, seeing the nest and young of the Tree-creeper (*Certhia familiaris*) under an old frying pan by the side of the water in Wycombe Abbey Park, and the young were, I have every reason to believe, safely reared. Last year I saw a Robin's nest in a hole in the wall of a dwelling-house made for ventilation, where, when a little trap door was opened, the nest and young might be seen from the interior of the house. I also saw last year, the nests of the Robin, Tomtit, and Golden-crested Wren within a few yards of each other, and of a dwelling house, the last nest being built in a deodar. I know too of a small house where, in a hole in the wall, the beautiful Redstart, or Fire-tail, has built successively for several years. Many of your readers are aware that the Abbey at Wycombe is the favourite haunt of the White Owls, but I am sorry to say they are not unmolested, *even there*; and hence they are not very common. The destruction of hawks and owls, especially the latter, is a great mistake, as their chief food is mice and small birds. Indeed, the White Owl does positively no harm, but very much good. Were it not for the stupid persecution of birds, specially by gamekeepers, and the destruction of their nests and eggs, they would not be so shy as they are. It is wonderful they don't avoid man altogether. But in truth, they like to build their nests in and about our dwellings, and I hope everyone will ere long raise his voice in favour of protecting them, and that bird-nesting will be regarded, even by boys, as a stupid and senseless amusement. We are told that Charles Waterton forbade the killing of a single bird or animal in his domain, and that he could point out an oak tree where there were, at the same time, the nests of the Barn Owl (with six young), a brood of Jackdaws, and a Redstart's nest, and that all entered at one hole. Again, there is an instance at Walton Hall, where a Heron's nest, a Crow's, a

Magpie's, an Owl's, a Blackbird's, a Redstart's, and a Pheasant's, were all within 200 yards of each other. These and other instances show that the birds will get on well enough if man will let them alone; and experience and observation show plainly enough that the balance of creation is perfectly adjusted unless men destroy it by their unreflecting interference.

T. MARSHALL.

Wycombe Butterflies.

III.—THE RED HORNS—(*Rhodoceri*dæ).

THIS family, which derives its name from the beautiful rose tint of the antennæ, includes three British species, one of which is very common in our neighbourhood, the second exceedingly rare, and the third *non est*.

THE BRIMSTONE (*Gonepteryx Rhamni*) is one of the first harbingers of Spring, often coming out on warm sunny days in February and March, enlivening the banks of resuscitating herbage, and even sometimes putting in an appearance in January, rousing pleasant recollections of last year's excursions, and filling us with hopes for the coming summer. The wings have a bold contour—the fore wings are angled at the extreme tip, the hind ones in the middle of the hind margin: the body is of a rich silvery blue on the thorax, the abdomen darker, the thorax is covered with silky hair rising to a ridge along the centre, and peculiarly beautiful in freshly emerged specimens. The wings of the male are of a strong brimstone yellow, with a bright saffron spot in the centre, showing much plainer on the under side; the female is much weaker in tint, and may easily be mistaken for a Large White: both sexes are greenish on the under side. This species is fond of lanes and woody districts, and is very plentiful round High Wycombe. I have not seen it since I left the neighbourhood, and it was like missing a very old friend. It emerges from the chrysalis in August, nearly always appearing

on the 1st, when it may be met with sporting over the richly adorned hedges in Hollow Lane. Those seen in the early part of the year are hybernated specimens, and are often in singularly good condition. The eggs are to be found in May on the Buckthorn; the caterpillar is pale green with a white stripe down each side.

THE CLOUDED YELLOW (*Colias Edusa*). Several years ago our respected President took fine specimens of this handsome insect in a clover field by the Totteridge Road; since then, until the summer of 1867, it had disappeared, though Mr. Kennedy, of Bradenham, says he saw one flying about in 1866. This last year, however, it re-appeared at several places in our immediate neighbourhood, as many members of the Society will recollect. (See p. 146.) Formerly the butterfly was supposed to appear in the country only at intervals of five or six years, but lately it has been gradually getting more common, and was very plentiful in many places last season. I had the pleasure of taking several at Folkestone—no light task, I can assure my readers, for it is very strong on the wing, and delights (at least in that neighbourhood) to soar up and down the hills and cliffs, which slope at an angle of about 50°. In fact, all three members of this family are very rapid flyers, and cannot be overtaken in fair chase across country. Great caution and tact are necessary, more especially for *Edusa*. But the captor is well repaid when successful, for the contrast between the broad black border of the wings and the deep orange chrome of the middle is very magnificent. The border gradually narrows from front to rear; in the female it is chequered with lighter orange spots, which the male does not possess. There is a black spot near the margin of the front wings, and a large circular one of deep orange in the centre of the hind wings which are suffused with a delicate green shade. The caterpillar feeds on clover and similar plants. A variety of the female occurs, having the ground colour milk white instead of the usual hue.

Colias Hyale is the species not found in this district: it has been taken near Eton.

HY. ULLYETT.

Folk-Lore.

PERHAPS the most amusing, and by no means the least instructive, of the many branches into which the study of local Natural History divides itself, is the one which directs attention to the curious traditions concerning animals and plants which have been handed down from generation to generation, and which still retain their hold in rural districts. Closely connected with this subject is that of the colloquial, or vulgar, names attached to various natural objects, the derivation of which is interesting both to the philologist and the naturalist. We have already expressed our wish to receive and publish all the information obtainable in our own district on these points, and it may be as well to commence with the few notes we have at present collected, in the hope that others may be urged to contribute their quota for the general benefit.

Snakes are ever fruitful subjects of rustic superstition. One of our members had killed a Slow-worm (*Anguis fragilis*), and was carrying it home on a stick. A sagacious peasant, however, warned him to be careful, for the thing couldn't die until the sun set, "no, not if you was to cut it in pieces." Of course, the popular errors regarding snakes are in full force here; although, to his honour let it be recorded, one man confided to us his belief that "common snakes wasn't poisonous, only adders and vipers," which seem to be regarded as two different things. Even the Land Efts do not escape condemnation: there is supposed to be *no cure* for their bite! (See p. 25.) Report says that a man at Flackwell Heath died from the effects of the bite of a Newt! Further particulars are solicited.

A curious distinction is made between the Common White Butterflies (*Pieris*) and the more brilliantly-coloured species. The former are called Butterflies, but the latter receive the remarkable designation of Hobhowchins!

The following treatment of epilepsy we commend to the medical profession. When other supposed remedies had failed, a travelling packman was consulted. He suggested two methods of cure, both of which were faithfully tried. The first was, that the afflicted person should procure a Jay; every morning, fasting, she was to chew a piece of bread, and then give it the bird to eat; on the death of the poor creature, the fits would cease. To make assurance doubly sure, another remedy was added, viz., a silver ring, to be worn on the ring-finger as an "amberlet" (amulet?), to be subscribed for and presented to the patient without her previous knowledge! The point of the joke lies in the fact that this mode of treatment was announced *by the invalid herself*. We regret that we are unable to state whether a cure was effected.

Among our wild flowers, we find that the name "Cuckoo's Victuals" is applied both to the Wood-sorrel (*Oxalis Acetosella*) and the Herb Robert (*Geranium Robertianum*). The former can trace its claim to the name back to the days of Gerard, who speaks of it as "Cuckowes meate, because either the Cuckow feedeth thereon, or by reason (that) when it springeth forth and floureth the Cuckow singeth most;" both of these reasons would, however, apply equally well to the Herb Robert. The latter is, indeed, a favourite with our villagers, who also call it "Cuckoo's Eye," "Billy Buttons," and "Ragged Robin." The second of these is applied to the Red Campion (*Lychnis diurna*), in districts where that plant is plentiful: the third is undoubtedly the property of *L. Flos-cuculi*, being admirably descriptive of its jagged, irregular flowers. "Cuckoo's Eye," "Bird's Eye," and "Cat's Eye," are names given to the lovely Germander Speedwell (*Veronica Chamædrys*); and they certainly are by no means inappropriate to the bright blue flowers of the prettiest, though, perhaps, commonest, of our Speedwells. At Buckingham, the Marsh Marigold (*Caltha palustris*) is known by the singular name of "John-Georges;" why, we cannot even conjecture. The name "Devil o' both sides," applied to the Corn Crowfoot (*Ranunculus arvensis*), although inelegant, is at least appropriate, when we consider

the sharp spines with which the ripe seed-vessels are beset. "Blackseed" is also well applied to the Nonsuch or Yellow Trefoil (*Medicago lupulina*). A herb in great repute for its healing properties is the Hedge Woundwort (*Stachys sylvatica*); medical skill sinks into insignificance by the side of the ointment prepared from its foliage: it is called "Cows' Weather (or Withy) Wind," the *i* in the last word being pronounced as in *wine*. The Bird's-foot Trefoil (*Lotus corniculatus*) is called "Cats-claws," and "Shoes-and-Stockings." Another spring flower which is connected with the Cuckoo is the Great Stitchwort (*Stellaria Holostea*), which is called "Cuckoo's Meat." The White Campion (*Lychnis viscaria*) claims the names of "Cow-rattle" and "Bull-rattle." The Mealy Guelder Rose (*Viburnum Lantana*) is named "Coventry." The Early Purple Orchis (*Orchis mascula*) is called "Kingfingers."

The Great Mullein (*Verbascum Thapsus*) is vaguely said to be "good for colds," and bears the names "Rag-paper" and "Poor-man's Flannel." Gerarde says that "the root, boiled in water and drunke, prevaieth much against the old cough." The same old writer remarks of the Tutsan (*Hypericum Androsæmum*) that "the leaves laid upon broken shins healeth them, and many other hurts and griefes, whereof it took his name Toutsaine, or Tutsane, of healing all things." Our Buckinghamshire people now call it "Touch-and-Heal," and consider it "a capital thing to put to cuts." It is curious to notice that the Mezereon (*Daphne Mezereum*) still retains a semblance of its proper name in "Mazalum;" there is an idea that it can be budded from the Wood Laurel (*D. Laureola*) "by them as knows how."

Here, for the present, we will "hold our hand." Enough has been said to show how, in many cases, the traditions of our fathers have been handed down to the present time. We hope to return to the subject very shortly, and shall be glad to receive, from any ingenious reader, suggestions as to the derivation of those names which at present appear obscure. We have by no means exhausted our resources, and we hope that our readers will assist us to the utmost of their power in our journey into "Oldwives-fabledom."

James Smith

Proceedings of the Society.

THIRD WINTER SESSION—1867-1868.

FIRST EVENING MEETING, NOV. 5.—Held by kind invitation at the house of the President. Tea and coffee having been provided at 6 p.m., the President opened the proceedings with an interesting and instructive address, in which he briefly adverted to the rise, progress, and present state of the Society, with some remarks on its aims and future prospects. He then introduced the Rev. W. Bramley-Moore, who read an exhaustive paper on "Local Museums." This has since been published in pamphlet form, and a copy is issued with the present number. At its conclusion a long discussion as to the practicability of establishing a Local Museum in Wycombe, took place, considerable interest being manifested in the subject. It was resolved that steps should be taken to ascertain how far such an object might be practicable: and the great hindrance—the want of a proper building—was alluded to. The desirability of making a commencement, however small, seemed to be generally felt. The Secretary then read a paper on "Additions to the Wycombe Flora, 1867," which will be found at p. 153. The objects exhibited were chiefly geological, many of them having been obtained by the President during a recent visit to Llandudno and other parts of North Wales. Living specimens of various fishes were exhibited in glass globes: and Miss Chandler's herbarium furnished a series of our local *Geraniaceæ* and *Primulaceæ*. The President then produced his new binocular microscope, and exhibited, by its aid, many objects of interest. The meeting, which was very numerously attended, separated at about 9.30 p.m.

SECOND EVENING MEETING, DECEMBER 10.—Held at the house of John Parker, Esq., at his kind invitation. The Secretary read a paper from Mr. Ullyett, on "Our Ferns;" this was illustrated by dried specimens of the species enumerated, and appeared to excite general interest. In the course of conversation Mr. F. Wheeler remarked that he had noticed several specimens of the Clouded Yellow (*Colias Edusa*) near Saunderton, during the past season; this locality is an addition to those previously named for it. The President gave an address on Geology, bearing upon the Antiquity of Man, illustrated by various fossil remains and diagrams. The objects exhibited included insects, shells, and fossils: some very beautiful living Diatoms and Desmids were shown under the microscope. The meeting, which concluded with the usual votes of thanks, did not break up until nearly 10 p.m.

Correspondence.

We shall be glad to receive articles on any natural objects, the preference being always given to such as have a local interest. Notes on the popular names of, or traditions concerning, Animals or Plants, or on any subject connected with Natural History, will be welcome.

FLORA OF BUCKS.—Having lately published a list of the plants at present recorded for the county of Buckingham, with a view to compiling at some future period, a complete Flora of the county. I shall be glad to forward a copy to any one interested in the subject. I have enumerated 777 species and 22 varieties; additional localities for any of which, especially in the north of the county, will be thankfully received. Since the list was published, the following species have been added to it: *Filago gallica*, of which a specimen exists in the British Museum, gathered near Iver, by Mr. Lightfoot; *Potamogeton perfoliatus* and *P. pusillus*, observed near Great Marlow in 1864, by J. C. Melvill, Esq., of Trin. Coll., Cambridge. Any information or co-operation, however slight, will be valued.

JAMES BRITTEN.

High Wycombe.

THE BIRDS OF BERKSHIRE AND BUCKINGHAMSHIRE.—Mr. Alexander Clark-Kennedy, a member of our Society, is about to issue, under the above title, "a description of the local distribution of all the British Birds that have ever (as far as the author knows) occurred in Berkshire and Buckinghamshire." We trust that many of our readers and contributors will use their endeavours to render this work as complete as possible. Mr. Alexander Clark-Kennedy writes:—"My book will probably be published next March, so that, up to that time, any notes, however trivial, will be very acceptable to me. Notes on the occurrence of rare visitors in your neighbourhood, original anecdotes of birds, the dates of the arrival and departure of our migrants, will likewise be gratefully received." It is hoped that this appeal may meet with a cordial response, as one great object of our

Society is to bring together the observations of its members. The work will be illustrated by coloured photographs; its price to subscribers being 6s. All communications should be addressed to Alexander Clark-Kennedy, Esq., Messrs. Ingram and Halton, Booksellers, Eton, by whom also subscribers' names will be received: or to the care of the Hon. Sec. of the High Wycombe Natural History Society.

THE WHEATEAR (*Saxicola ananthe*).—In the October number of your Magazine, Mr. T. Marshall notes the occurrence of the Wheatear at High Wycombe in the month of March. I have observed the same here in about the middle of that month. I generally see a few pairs on the Down in March, and again in October; they remain only a few days, and then disappear. I remember once seeing nearly forty birds of this species in a field near Salisbury, they frequented the same spot for about four days; afterwards not one was to be seen in the neighbourhood. This occurred in March.

ANTHONY S. BRADBY.

Moundsmere, Hants.

THE HEDGEHOG.—Mr. Augustine Gaviller writes: "I do not forget standing up in the vestry of Wycombe Church at one of our meetings there, over twenty years ago, to object to the payment, by the then Churchwardens, of a sum of money for killing hedgehogs and sparrows: and that an old farmer then present took me to task for saying that hedgehogs were comparatively harmless animals: he informed me that I was greatly mistaken, for they *sucked cows*, and thus spoilt them. I told him I would pay any man a handsome reward who could give me clear evidence of this, that their teeth

were like cats' teeth, and that I much doubted whether a cat could be caught sucking a cow, however fond it might be of milk. On this the old gentleman was rather wrath, and thought I was wholly ignorant of country matters. Speaking of cats taking milk, I remember many times seeing a cat of mine stand up on her hind legs when my cows were being milked, and seeing her divert the stream of milk into her mouth with her fore-paws before it got to the pail."

THE following might well have called forth one of Gray's classical sonnets, had the poet's eye witnessed the incident. As I was sitting in my study one Sunday morning, a robin hopped near the window as he poured forth his song. The cat, who was inside the room, and somewhat hidden by the ledge, sprang out and seized the songster. Her growls of satisfaction seemed to sing his requiem. For some cause or other, possibly to secure a better grip, she relaxed her hold, and the robin instantly flew off, perched upon my garden wall, and there finished his interrupted song.

WILLIAM BRAMLEY-MOORE.

Gerrard's Cross.

In the summer of last year I met with a singular instance of tenacity of life in a rabbit. Walking in the wood above Wycombe Park, my attention was attracted to a rabbit which ran out into the open glade pursued by my dog. It doubled again and again in a feeble way, and I hastened to the rescue, believing it to be wounded. I hastily secured it, folded it in my cloak, and carried it home; on producing my prize a piteous spectacle met our view. The little creature had no eyes, and through the empty sockets we could see quite into the head, which appeared hollow and almost in a state of decomposition, while the body was plump and healthy. It appeared to me a singular incident, and worth recording. I should be glad to know if any of your correspondents have met with a similar one, and can explain the cause of it.

High Wycombe.

E. C.

THE STOAT.—I once had a very good opportunity of observing one of these animals in West Wycombe Park. It was hunting about among some dead leaves very assiduously, and by remaining perfectly quiet I was able to watch it through my glass for a good quarter of an hour. On hearing the slightest sound, however distant, it would instantly pause, and rearing itself on its hind legs, peep round in every direction to ascertain the cause. If satisfied, it would resume its search, but if another sound followed immediately, it darted into its hole. Here it would remain a minute or two, and then cautiously emerge, looking about to see if the coast was clear. At last it settled itself down on a bank, and drawing its forelegs underneath its body, it went to sleep. The Stoat is much commoner than is generally supposed, but being very retiring in its habits, and very timid, it is seldom seen. A very fine specimen was taken two or three years ago at West Wycombe, measuring 16 inches in length: it is now in the possession of Dr. Bowstead.

HY. ULLYETT.

SCARCITY OF COMMON LEPIDOPTERA.—The Brimstone Butterfly generally so very plentiful round High Wycombe, seems to have been very uncommon during the last season. I saw more hibernated specimens in the spring than freshly emerged ones in August. Can any of your readers suggest a reason for this? Had the frosts of May anything to do with it? The Small Tortoiseshell and the Peacock have not been by any means so plentiful as formerly.

A.

[We should be glad to hear from other correspondents whether the same scarcity has prevailed in neighbouring districts. ED.]

LATE MARTINS.—On Saturday, November 16th, I saw two Martins flying about over the Taplow road, near Maidenhead. The latest date on which I have observed them in previous years was on November 15, in 1863, at High Wycombe.

T. MARSHALL.

Notes on Buckinghamshire Plants.—I.

IT is my intention to publish, at intervals, in our Magazine, short papers upon the various points of interest presented by a subject which has engaged much of my attention,—the Flora of Buckinghamshire. The following is a list of plants which have been recorded as natives of Bucks, but which are not known to have been found in the county for at least sixty years. There is nothing improbable in the occurrence of any of those enumerated; and one object which I have in view is to obtain, if possible, recent confirmation of the correctness of the localities assigned to the different species. All the plants named are recorded as natives of Bucks *solely* on the authority given. The principal of these is Turner and Dillwyn's 'Botanists' Guide,' published in 1805, to which I refer, for convenience, by the letters *B. G.* following the locality.

Helleborus foetidus, L. "Chalk hill near Hedsor Wharf, *Mr. Gotobed.*" *B. G.*

Turritis glabra, L. "Roadsides and old gravel-pits near Burnham, *Mr. Gotobed.* About Denham, *Mr. J. Rayer.*" *B. G.*

Teesdalia nudicaulis, R. Br. "Salthill (near Eton), *Mr. Gotobed.*" *B. G.*

Dianthus deltoïdes, L. "On Mantham Hill, near Slough, about a mile and a half from Windsor." *Ray* (*Synopsis* iii., 366). "On a wall at Langley, near Iver. *Blackstone.* On Salthill, *Mr. J. Rayer.*" *B. G.*

Sagina subulata, Wimm. "Dry banks on Iver Heath. *Mr. Gotobed.*" *B. G.*

Erodium moschatum, Sm. "On the rubbish near Salthill. *Mr. Gotobed.*" *B. G.*

Radiola millegrana, Sm. "On Gerrard's Cross Common, near Bulstrode, in great plenty. *Mr. Gotobed.*" *B. G.*

Lathyrus Aphaca, L. "Among the corn near Denham." *Blackstone*. "Gravel pit near Burnham. *Mr. Gotobed*." *B. G.*

Seseli Libanotis, Koch. "Inter St. Alban's et Stoney Stratford." *Hudson*. This station may be either in Herts, Beds, or Bucks. See *Flora Hertfordiensis*, p. 123.

Tordylium maximum, L. "Hedges near Etonwick, in the greatest abundance. *Mr. Gotobed*." *B. G.*

Filago gallica, L. A specimen in the Banksian Herbarium, at the British Museum, gathered near Iver by Mr. Lightfoot.

Xanthium Strumarium, L. "I found in the highway leading from Draiton to Iver, two miles from Colebrook." *Gerarde*.

Jasione montana, L. "Lane between Denham and Iver Heath," *Blackstone*.

Andromeda polifolia, L. "On Iver Heath, *Mr. J. Rayer*." *B. G.*

Melampyrum cristatum, L. "In a field that goes off Moreton Green in the road from Wendover to Ellesborough. *Blackstone*." *B. G.*

Mentha rotundifolia, L. "Between High and West Wycombe. *Mr. J. Rayer*." *B. G.*

M. rubra, Sm. not Fr. "By the river side a mile below Denham. *Blackstone*." *B. G.*

Centunculus minimus, L. "On Gerrard's Cross Common, near Bulstrode, in great plenty. *Mr. Gotobed*." *B. G.*

Chenopodium olidum, Curt. "On rubbish at Eton. *Mr. Gotobed*." *B. G.*

Thesium humifusum, DC. "Chalk banks near Marlow. *Mr. Gotobed*." *B. G.*

Salix rubra, Huds. "In the osier-holt between Maidenhead and Windsor." *Ray*.

Myrica Gale, L. "By Colebrooke." *Gerarde*.

Habenaria viridis, R. Br. "Marlow Wood, rare. *Mr. Gotobed*." *B. G.*

Carex Pseudo-cyperus, L. "Ditches near Eton, not uncommon. *Mr. Gotobed*." *B. G.*

C. ampullacea, Good. "Chalvey-ditch, near Eton. *Mr. Gotobed*." *B. G.*

JAMES BRITTEN.

The Birds of Cookham and the Neighbourhood.

THE KINGFISHER.—Continued from page 152.

FROM his window opposite this point, he has watched them, and he tells me he has sometimes seen Kingfishers dive unsuccessfully five or six times, each time returning to the post. I would venture to suggest that the bird does not always dive for fish, but that he makes a commotion in order to attract them, for we all know how fish will assemble at any point where a stone has been thrown in or the water otherwise disturbed. Mr. Briggs concurs with me in this idea, and I well remember seeing a Kingfisher on Widbrook Common, near Cookham, dashing into a little brook which traverses it, first one way and then the other, and making the water fly in all directions. Six times did it plunge, and it is obvious it did not catch six fish; and as it took up its station on a willow immediately above the spot it had disturbed, I can only suppose it was attracting the fish to the spot by the commotion it had caused. When the bird has captured its finny prey, it does not always kill it on the branch from which it dived, but carries it further on to another resting-place, where it taps it sharply in order to kill it, and then swallows it whole. The favourite place for this purpose is the side of a boat or punt, and there is a boat moored in the stream running up one side of Formosa, towards Mr. Venables' Mill, which is a chosen resort for the Kingfishers. Here they alight and rest after swallowing their prey, and the bottom of the boat is often strewn with the pellets thrown up by them. Two birds are often seen seated close together on the boat's side; and the rap they give the fish before swallowing it can be heard a long distance off. I have studied their habits round Cookham, and I believe that each bird has its own separate hunting ground, and its own favourite posts; for after some weeks pursued in watching them round Odney Common, and thence through Miss Fleming's grounds at the Grove, I used to know, when I had started

one, where it would settle next, and have proved this to my friends on several occasions. It is a quarrelsome bird, for if one Kingfisher intrudes on the hunting ground of another, or comes near the spot where one is already seated, the latter darts at the intruder, and then ensues a loud screaming, one chasing the other round and round, until it has driven the stranger off, when it settles again, and resumes its former perch. At these times the rate at which they fly is prodigious, and I think, for a small distance, for it is by no means a bird of long flight, the Kingfisher is the swiftest flying bird in existence. When fairly settled on a post, it sits "all of a heap," occasionally jerking its head up and down on its shoulders like Hawks do; and so intent does the bird become on the pursuit of its prey, that it can often be surprised by any one walking along the bank of a stream. I know two instances within the last few years of the Kingfishers falling victims to cats; for the finest specimen I ever saw was captured by a cat on Mr. Charles Venables' grounds at Taplow, while Stanniforth, who has been already mentioned in the account of the Osprey, had another, caught by his own cat near Cookham Lock. The Kingfisher does not always breed in the banks of a river, the enormous increase of rats having, no doubt, contributed to thin their numbers and drive them away. A pair built in a bank in Mr. Goulden's garden at Maidenhead, last year, although there was no water near. The brood was hatched, but the young birds were devoured by a cat or by rats. The bones composing the nest can even now be taken out with the hand. Mr. Briggs tells me that he has met with several instances of the breeding of this species away from the water, a pair having reared their young in a chalk pit at Taplow Court, for several successive years; while at Billingbear he found a pair breeding in a gravel pit, the nearest stream being four miles off, and no water near the place except a tiny rivulet, containing a scanty supply of sticklebacks. Lately, some correspondent in *Land and Water* called attention to the fact of this species breeding away from

the water, and immediately instances were quoted in reply. As I am particularly interested in the Kingfishers, being now engaged in a monograph of the *Alcedinidæ*, I should be glad of any notes or specimens of any species, and for this purpose would ask any of my readers who may have the opportunity of communicating with friends abroad, to endeavour to obtain specimens for me, in spirits; all such help will be gratefully acknowledged in my work.

In conclusion, I may remark that I believe the powers of flight in the Kingfisher to be greatly underrated, for I am convinced that it is *migratory* to a great degree, coming south as the winter approaches. I have always noticed (and Mr. Briggs also) that a decided increase always takes place in the number of Kingfishers towards the end of October, and as regards its powers of flight, my friend Mr. J. E. Harting tells me he has seen Kingfishers fly straight out to sea until lost in the distance. If then our estimate of the Common Kingfisher's power of flight be under the mark, we ought not to be surprised at the Belted Kingfisher's appearance in Ireland, as the bird might have rested on floating spars or seaweed on its passage across the ocean from North America, and thus have been able to reach Europe. The only cause of wonder is on what can it have fed all the time, and why have no more been observed in Europe before or since?

Order SCANSORES.

Fam. CUCULIDÆ.

Cuculus.

20. *Cuculus canorus*. The Common Cuckoo.

A curious fact occurred this summer in connection with a Cuckoo at the Zoölogical Gardens, which was duly noticed in *Land and Water*. In an aviary where a Cuckoo was living which had survived the winter, a hedge-sparrow (*Accentor modularis*) was seen. Whether he was put in or had entered of his own accord, is not known, but no sooner did the Cuckoo perceive the little bird than he immediately greeted it, flapping his wings, and with open mouth wanted the hedge-sparrow to

feed it. The bird was quite full grown, and Mr. Bartlett tells me he has often heard it cry "cuckoo."

At Cookham the Cuckoo is plentiful in some years, but at other times scarce, and I have noticed a curious fact, that in those years when the bird is commonest, the Wryneck, which is called the "Cuckoo's Mate" by the villagers, is seen only sparingly, and also when the latter bird is plentiful, the Cuckoo is comparatively rare. For instance, in 1865 Cuckoos were very numerous, and Mr. Briggs found four eggs in the gardens at Formosa alone, but in 1866 the bird was seldom seen or heard; while the Wryneck was very common, several being shot in the neighbourhood. Again, this year (1867) the Cuckoo was more common, but there were very few Wrynecks. According to Mr. Briggs's experience, and my own, the nest generally selected by the Cuckoo near Cookham is that of the Pied Wagtail (*M. Farrellii*), and in nearly every instance the young birds we have noticed flying about towards the end of July or the beginning of August have been fed by this same bird. The egg deposited by the Cuckoo has always closely resembled those of the Wagtail, and I have more than once been inclined to disbelieve Mr. Briggs when he has shown me the eggs, as to there being a Cuckoo's in the nest, so alike were they, and but for a slight predominance in the size of the Cuckoo's egg, it would be almost impossible to distinguish one from the other. However, in every instance a young Cuckoo has appeared in due course, and the proper inhabitants of the nest having been ejected, has remained master of the field. Mr. Briggs thinks that the old birds, although they cease to call, do not leave the young ones until they are able to fly, when they all quit the country together. I have sometimes seen very late birds, and well remember watching a young Cuckoo catching flies in the grounds of the Grove. It was towards the middle of September, 1865, and I was standing in the midst of a clump of fir and ash trees, when I saw the bird descend and catch an insect. It settled on a branch not twenty yards off, whence it again descended, and took a fly or other insect off the trunk of one of the

fir trees, clinging to the tree with both feet. It was full grown, evidently, but in the dark mottled plumage of the young bird.

Fam. PICIDÆ.

Sub-fam. PICINÆ.

Picus.

21. *Picus major.* The Great Spotted Woodpecker.

This handsome bird is often heard round Formosa, and especially on the elm trees in Lady Young's grounds adjoining. It breeds in Cliefden Woods, and towards the end of August and the beginning of September, both the Larger and Lesser Spotted Woodpeckers descend to the gardens at Formosa from the opposite woods, to feed upon the American blight, as Mr. Briggs calls it, which is then in such abundance on cankered apple trees. Its note may well be represented by the words *quick, quick.*

22. *Picus minor.* The Lesser Spotted Woodpecker.

Most of my readers, no doubt, possess, or have seen, a copy of Mr. Gould's magnificent work on the *Birds of Great Britain*. In Part III. will be noticed a beautiful illustration of the present and last named species. This pretty little Woodpecker is by no means rare at Cookham, and in the above work the author justly acknowledges the assistance of Mr. Briggs in procuring for him both birds and eggs. As *P. major* frequents the elm trees, so does *P. minor* the poplar, and it has reared its young at Formosa for several successive seasons. The enormous height at which the bird builds successfully prevents any rash attempt at procuring its eggs, and at present I am content with a pair of birds and a portion of the branch containing the hole in which the birds bred last year. They always select the very rottenest branches, and the piece in my possession was blown off in one of the severe gales last year. Mr. Briggs is one of the most expert climbers I ever saw, and few men would have had the nerve to mount to the dizzy height at which he procured the nest for Mr. Gould. The longest ladder in the village was fetched, but it did not reach one third of the distance to the hole, and the tree was most difficult to climb, Nothing daunted, however, he mounted up, with a saw in

his hand, and a coil of rope to tie himself to the tree, and to let down the branch. After great exertions he reached the nest, and having secured himself, he sawed off the branch, and let it down to the ground without breaking an egg. He was by this time nearly exhausted, and could hardly move, but at length he reached the ground where his wife was waiting for him, having been dreadfully frightened at seeing the danger he was in. This was the most perilous climb he ever had, but he has procured several nests of this species for Mr. Gould, and I do not despair of having the eggs in my own collection before long, as they are not rare. Mrs. De Vitre has a fine pair of the birds in her collection, and I have a nice male and female in my own. Mr. Gould does not mention a peculiar habit of this bird in his *Birds of Great Britain*, which is, the way in which they call and answer each other. The note of the larger species can be heard a long distance off, and its voice is powerful; but the present species has a very weak note indeed, though somewhat resembling the cry of *P. major*. The Lesser Spotted Woodpecker is one of the earliest birds to pair; and at the period of nidification they are exceedingly busy, and constantly uttering their note. Now, as the tall poplar trees in which the birds breed are at either end of a very large field, separated from each other by about three hundred yards, the call note of the bird would not penetrate a quarter of the distance. It often happens that the two birds are at opposite sides of the field, so in order to call its mate, one of them runs up to the topmost and thinnest branches of the tree, tapping vigorously all the while, the *tirr-r-r-r* becoming shriller as the bird ascends. In this manner he can call his mate, for the sound can be heard a very long way off, and he is answered in the same way by the bird from the other side of the field. This species is very restless in its flight, flitting constantly from bough to bough at the tops of the poplar trees. Mr. Briggs tells me that Woodpeckers, but more especially the present species, when shot, cling to the trunk of the tree in their dying grasp, and many, although quite dead, so that it sometimes requires a second shot to dislodge them.

R. B. SHARPE.

To be continued.

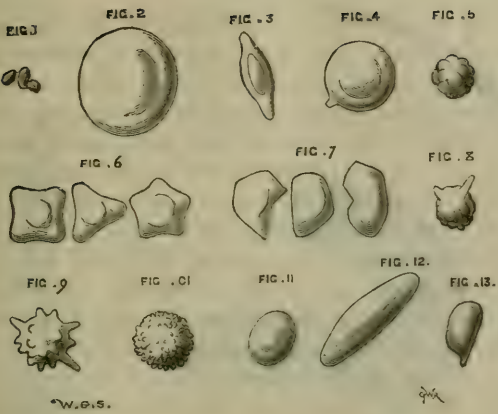


FIG. 14.



FIG. 15.



FIG. 16.



FIG. 17.



FIG. 18.



118

QWR

FIG. 19.

On the Seeds or Spores of Fungi.*

THE varied forms and beautiful construction of the seeds of our flowering plants have long occupied the attention of observers of nature, but the seeds, or spores, of fungi, from their diminutive size, and the impossibility of investigating them without the aid of a microscope, have been comparatively unnoticed. In this paper I shall endeavour to direct attention to the endless variety and beauty which exists in these minute organisms, as in every object, small or great, in the vast kingdom of Nature.

Some fungi-spores are smooth, dry, and polished, others are viscid and sticky; some are very persistent, whilst a fourth are very evanescent, and speedily collapse and perish. Some possess highly poisonous properties, for Dr. Badham is said once to have suffered violently from simply tasting those of one of the Milk-mushrooms! Indeed, many species are acrid and pungent to an extreme degree: some varieties at once attack and inflame the mouth; whilst others are more quiet, with a taste at first, sweet, mild, or inoffensive, but which after a time, causes violent pain, and in at least two species, constriction of the throat. It has more than once been suggested that the mysterious poison of the gipsies, the so called "drei," which is said to be a soft impalpable powder, is nothing more nor less than fungi-spores, gathered from some poisonous species.

Such minute objects are, of necessity, light; they are therefore ever present in the air, and are blown hither and thither by every breeze. When the seeds happen to alight on a suitable matrix, with favourable external conditions of light and moisture, they germinate, and form the so-called spawn; if a large number all germinate together, the spawn becomes confluent, and forms

* Read before the Society at the Fourth Meeting (Feb. 4, 1868) of the Third Winter Session, 1867-8.

one mass. It is from this spawn that the mushrooms arise, first appearing as minute points the size of a pin's head, speedily increasing to the size of a pea, or of a marble, till at last the perfect plants appear, loaded with millions of spores, ready to continue the work of reproduction. The seeds, or spores, are found everywhere, in towns as well as in the country, in houses, cellars, and indeed, within the human body itself, as they are constantly met with during *post mortem* examinations! How far diseases are aided, promulgated, or caused, by the germinating seeds of fungi it is very difficult at the present time to say.

Some fungi-seeds, as in the common Truffle of our markets, are entirely subterraneous, and never see the light. The truffles are found beneath the surface of the ground, and within them are the seeds, sculptured and ornamented; of necessity these seeds are always underground, but on the death of the parent plant, they are set free, to form the spawn for succeeding generations. The seeds of some mushrooms never germinate elsewhere than on certain trees, as in the Elm Agaric; it is therefore evident in this species that whatever number of seeds be strown about, none will germinate but such as alight upon moist or damaged places on elm trunks; every year in the autumn there is an abundance of these things on the elms in St. James's Park, near the Horse Guards. A great many will only germinate in rich dungy meadows, in dense woods, or on open downs; some in cellars and cupboards; whilst some varieties will only grow upon *other mushrooms*, adhering to them and bearing them down, like the Old Man of the Sea on the back of Sindbad the Sailor.

Inexperienced persons are apt to think that there is no order in the arrangement and functions of these minute objects, and that the seed of one species may, under suitable conditions, produce the perfect plant of another, but all experience points in the opposite direction. For, after all, what is size in nature? it is merely relative: one thing appears large only on being compared with something smaller. It is as impossible for the seeds of an edible mushroom on germinating to produce a poisonous species as it is for a lamb to give birth to a lion.

Some seeds are a long time in germinating, and the produce lasts a considerable time; other seeds (as of the ephemeral and fragile mushroom-like fungi which a breath destroys, so common on dunghills or dungy ground), germinate rapidly, produce the perfect plant, teeming with fresh seeds, and at once dissolve into a few drops of inky fluid. As a rule, all fungi seeds grow readily on decaying substances, such as the half rotten leaves of trees, dead grass, rotten wood, &c.; the seeds of some half-dozen species never germinate elsewhere than on fallen fir-cones, others again on acorns or ash-keys, beech-nuts, or fallen and decaying twigs and branches. The perfect plants are evidently vegetable scavengers, whose chief office is to eat up and destroy all the *débris* of the plant world.

Many minute insects are very fond of fungi seeds, and eat them up eagerly. It is almost impossible to preserve some spores in the herbarium, they are so attacked by minute creatures, who ravenously devour the fungoid sweetmeats. The seeds of other fungi, however, in their turn, attack insects, and sticking between the segments of their bodies, there germinate, transforming the juices of the insect into a spawn-like mass. When caterpillars bury themselves in the autumn to assume their chrysalis condition, the seed of a fungus finds them out and sucks their juices; the fungus itself then appears *above* the ground like a small crimson club, which should be a warning to all caterpillars in the neighbourhood who may not yet have put on their chrysalis livery.*

* By the kindness of Mr. Hardwicke we are enabled to give several figures illustrative of this peculiar growth of fungi. Figs. 17, 18, 19, are British species, attached in the one case to the chrysalis, and in the other to the larvæ, of a moth: the first is *Torrubia militaris*, the second and third *T. entomorrhiza*. Some foreign species of this genus attain a great size: fig. 15 represents one found in Tasmania (*T. Gunnii*). The most remarkable of all, however, is the New Zealand *T. Robertsii* (fig. 16 c), parasitic upon a species of Swift moth (*Heptamelus virens*). It has been erroneously supposed that the horn, with which we are all familiar on the larvæ and pupæ of the *Sphinxes* or Hawkmoths (fig. 16 a and b), was in reality the germ of a fungus, but this is incorrect, as the *Torrubia* is not parasitic upon a *Sphinx* at all. Withering speaks of *T. entomorrhiza* as having been found "on the dead larvæ of insects in woods near Bulstrode, Buckinghamshire." For further information on these interesting productions we refer our readers to *Science Gossip* for 1866, pp. 127, 176.—ED.

The white seeds of the Clouded Mushroom germinate in woods (generally on old fir leaves), whilst the pink seeds of Lowe's Mushroom *invariably* germinate on the top of the former, and never grow elsewhere : there is even a third fungus, which attacks and destroys both. But although the arrangements of nature are sometimes involved and complicated, there is no such thing as confusion : confusion only arises in our imperfect comprehension of her works. As regards the seeds of fungi, they each and all germinate at their proper seasons, and in their appointed places : each one is perfectly distinct from its neighbours, and many species of fungi can be recognised by the seeds alone.

A word as to gathering mushroom-seeds : cut off the stem and lay the top, gills lowermost, on a sheet of paper or glass ; in the course of a few hours the seeds will have fallen away from the gills and be deposited on the paper or glass as a purple-brown stain ; they can then be readily transferred to an extremely thin sheet of mica, and on another thin layer of mica being placed over them so as to enclose them from the dust, they may be preserved for many years always ready for the microscope. Care should be taken not to mount too many on the sheet ; there should not be a *distinctly visible* quantity.

Fig. 1 shows the spores of *Polyporus caesi*us : they are pale blue in colour, and of a very pure shade, oval in shape, and the smallest spores I ever observed ; the extreme length being only one ten-thousandth of an inch—if placed side by side, 200,000,000 would be required to cover a square inch. As the parent plant frequently covers 12 inches superficial, it will be seen that one plant is capable of producing two thousand four hundred millions on its superficial surface alone ; but as these spores are, at least, ten deep, it is a moderate computation to state the number produced by each plant at twenty-four thousand millions. The most wonderful consideration is, however, the fact that each of these spores is endowed with a minute spark of life, and is capable of reproducing the perfect plant. The parent is a woody *Polyporus*, not uncommon on old larch wood.

Fig. 2 shows the *largest* spores I ever observed: they are produced by *Agaricus mucidus*, an Agaric with a top two inches in diameter, not uncommon on old beech trees; its average diameter is one two-thousandth of an inch, and it requires 2,000,000 placed side by side to cover a square inch,—so much for the *largest* spore!

On fig. 3 are the spores of *Boletus parasiticus*, of which the common *Boletus edulis* may be taken as the type. It is remarkable that all *Boleti* spores are *spindle-shaped*; they vary little in size, and the majority are brown in colour.

On fig. 4 are the spores of *Agaricus vaginatus*, one of the commonest of our larger Agarics; the apiculus shows the point of attachment to the parent plant.

Fig. 5 shows a very uncommon form of spore from *Hydnum imbricatum*; it is peculiar to the genus *Hydnum*, of which the common *Hydnum repandum* may be considered the type.

On figs. 6 and 7 are typical spores of the *pink-spored* fungi; they are always irregular in shape, resembling nodules of granite—the form is not caused by compression. Fig. 6 is from *Agaricus pascuus*, fig. 7 from *A. nidorosus*.

On figs. 8, 9, and 10 are spores of the milk-bearing genus *Lactarius*: they are always more or less curiously papillated, and vary in colour from white to orange. Fig. 8 is from *Lactarius blennius*, fig. 9 from *L. fuliginosus*, fig. 10 from *L. quietus*.

Fig. 11 is a spore of the Meadow Mushroom, *Agaricus campestris*. It is purple-brown in colour.

Fig. 12 shows a slate-coloured spore of *Gomphidius viscidus*, a handsome Agaric with purple gills, not uncommon in the autumn.

Fig. 13, one of the jet black spores of *Coprinus micaceus*; this is one of the black-gilled deliquescent fungi. The species in question is common on rotten stumps in the autumn, and the pileus is clothed with sparkling mica-like granules.

The spores are uniformly enlarged to 1,000 diameters: a good idea of the size of all of them may be obtained by considering the dimensions of figs. 1 and 2.

WORTHINGTON G. SMITH.

Our Migrants.*

THE migration of birds has always been a favourite theme of ornithologists, and a few notes on this subject from a member of our Society would appear to be of a sufficiently interesting nature to engage the attention of all who are to any extent gratified with the study of Natural History, and with the reflections which must necessarily follow the pursuit of this study in all the varied forms which are everywhere presented before them. It can, indeed, scarcely be conceived that anyone, however deficient in education or intelligence, can fail to have wondered at and speculated on the character and nature of that mysterious knowledge or power, which, inherent in all animal life to a greater or lesser extent, supplies the want of the gift of reason and indeed would seem to be in many respects its superior, since the faculty of reason possessed by man would fail to serve the ends and purposes which are worked out by what is generally regarded as an inferior faculty. In no respect, probably, does the wonderful power of Instinct develope itself to us in a more remarkable or striking manner, than in the migration of birds. This subject has always been a source of wonder and delight to all observers of natural objects. How often does it crop up in the delightful letters of Gilbert White! How much did this great student of nature watch the appearance and departure of our summer and winter visitants, and how much puzzled was he at times to account for the long and arduous journeys made by them, and for the powers which some of our smaller birds possessed to sustain them in their long and rapid flights to and from the British Isles! The regularity and precision which attend their migration, not less than that of the seasons of the year, suggest an endless train of thoughts and reflections on the wonderful power which impels them in their flight—

* Read before the Society at the Third Meeting (Jan. 7, 1868) of the Third Winter Session, 1867-68.

we cannot understand it, but we can at least admire the beauty and harmony which pervade the whole of nature in its every form and aspect.

I purpose in these few notes to refer to some of our well-known British migratory birds—the period of their appearance and departure, and, so far as may be known, their habitat in foreign lands. Of all our summer migrants the Swallow tribe, known to ornithologists as the *Hirundines*, would appear to occupy the prominent place: scarcely a schoolboy but looks out for the first Swallow, and notes the date of its arrival, watches with interest the new comers betake themselves to their accustomed haunts, the building of the wonderful nest of mud under the favourite eaves, the feeding of the young ones, the congregation of the species in autumn, and their apparently sudden departure for distant lands. The Swallow and Martin usually arrive in the beginning of April. Their sojourn during the English winter is made chiefly in Africa, but probably not further south than the Tropics. Here they remain till the changing seasons impel them northwards, their line of flight being across the Mediterranean into France and Spain, and thence across the English Channel to our own Island. During August and September they assemble together in vast numbers, and these are constantly being swelled by the young broods as they leave their nests and take to flight. The osier beds about the Thames are a favourite roosting place. In October the great exodus of Martins takes place; silently they come to us, and suddenly they go, their numbers vastly increased since their arrival among us. A few only remain behind, and these soon vanish, so that a Martin in November is a great rarity. Last year I saw two as late as the 16th of November, which is one day later than I had previously observed them. A few days after the general departure—and the great bulk of our summer visitants are flitting about the western region of Africa, insect hunting on the Niger's stream, or domesticating themselves among the people of Timbuctoo. The favourite theory of Gilbert White, that vast numbers of the Swallow tribe remained in holes and hiding places, even under water, in a torpid state, is one which finds little favour with

modern ornithologists, and seems indeed too improbable to require present notice.

The Cuckoo is so well-known that but a short notice of it is necessary. It arrives about April and leaves in July. It lays its eggs in the nests of other birds, and leaves to them the duty and burden of incubation and raising its young. The Hedge Sparrow is very often saddled with this burden, which occasions no slight domestic trouble; for the young Cuckoo when he gets big enough, as he soon does, elbows the young Sparrows right out of their nest. To say nothing of his voracity, his presence must be in all respects a great burden, and, as soon as he can fly, off he goes, and his foster parents see him no more. The young birds remain after the older ones, and they all spend their winter in the sunny regions of Northern Africa.

We will next notice the Wryneck, or Cuckoo's Mate. The latter name is given on account of its arrival about the same time as the Cuckoo. This singular bird is provided with a long tongue, which it darts out on its food, chiefly ants and insects, which adhere to a glutinous secretion with which it is supplied. It breeds in the holes of trees. Last year I had a live one brought to me in a cage. According to Gilbert White the tongue of this curious bird is occasionally coiled round its head.

Among our other summer visitants we must notice prominently the Nightingale, Blackcap, Whitethroat, Redstart, Landrail, and Flycatcher; numerous other species can be enumerated, but space and time would fail to notice them all. The Nightingale arrives here about the middle of April: its song continues until June. The distribution of this species does not extend to Ireland, Scotland, Wales, and many parts of England; it is not usually found north of Yorkshire, but seldom in Devonshire, and is, I believe, unknown in Cornwall. It leaves us in the Autumn, and passes the winter in Northern Africa. The Blackcap is one of our latest visitants, and one of our sweetest songsters; its note may be constantly heard as it sings cheerily to its mate, forming a part of the great chorus of joyful sounds which delight us in our communion with Nature. The Whitethroat arrives among us in April, and soon distributes itself throughout the

British Islands. It is a bird common to Europe generally. It leaves us in autumn for the milder regions of the south. The Redstart, or Firetail, is a very beautiful bird. It arrives in April, and is not very common, although one seldom passes a summer without seeing a few of the species. It builds in holes in trees and walls. Gilbert White says, "Sitting very placidly on the top of a tall tree in a village, the cock sings from morning to night; he affects neighbourhoods, and avoids solitude, and loves to build in orchards and about houses." The plumage of the male bird is far more bright and beautiful than that of the female. This species, like the last, leaves us in the autumn on its journey to a warmer clime. The Landrail is another of our summer visitants. Its curious note, or crake, may be heard during the morning and evening. It possesses the peculiar property of ventriloquism in so wonderful a manner as to give the idea of being first near and then afar off. This bird seldom flies, is with great difficulty flushed by the sportsman, and its wings being very short, and the flight low and clumsy, seems very poorly adapted for the wonderful work of migration, which, however, it accomplishes twice every year. The nest is built on the ground, and the eggs are from seven to ten in number. This species has been noted in Africa and as far south as Madeira. It would appear that they come over here in large numbers, and this indeed is probably the case with most of our migrants, which nevertheless on arrival soon disperse themselves throughout the land. The last of our summer migrants is the Flycatcher. It arrives about the middle of May, and soon makes itself at home amongst us. It courts the society of man, and builds its nest against the walls of a house, on a vine or fruit tree. It has no song, and is altogether a quiet and sober-looking bird, usually sitting on a bough, and then darting after the flies as they pass along. Insects are its staple food, although it is accused by the gardeners of a partiality for cherries. This indeed is, however, one of those curious charges which are being so constantly and wickedly trumped up to justify the slaughter of the feathered tribe by the gardeners during the summer. Who can see this

quaint, quiet-looking little bird seated on the top of a rail or on a small bough, darting off chasing and catching flies, and then returning to the same bough after each capture, without noticing the great part it is performing in the economy of Nature, and how silently it is aiding in the maintenance of the balance and harmony of creation. I have known this species build two nests in the same place during one season. The Flycatchers leave us in the Autumn; what their southern range is I do not know, but it is probably confined to the southern parts of Europe and the north of Africa.

In addition to the birds I have noticed as among our common summer migrants, I should say that many of our common birds which are not usually considered migratory are indeed so to a great extent. Thus, large numbers of Goldfinches, Greenfinches, and Wagtails collect on the southern shores of England in the autumn season and pass over the Straits of Dover into France, returning in the following spring. This is well-known to the Brighton bird-catchers, by whom the Goldfinches from France are much valued on account of their gayer plumage, while those which sojourn here are contemptuously styled harbour-birds, their plumage being in early spring very inferior to that of the migratory birds. This is no doubt owing to the difference in climate.

I cannot in this paper notice the various species of our winter visitants. This can, if thought desirable, be followed up in another paper. They consist of, amongst others, the Fieldfare, Redwing (which here only utters a harsh sort of note, but is celebrated in Norway for the beauty of its song), the Snipe, Woodcock, Crossbill, Wildswan, Wildgoose, and several others. They cannot possess in our eyes quite the interest which is claimed by those which come in summer, and take up their abode, cheering us with their song, and rearing their young among us. We cannot, however, think for one moment of the long and marvellous nocturnal flight of the Woodcocks across the German Ocean, without seeing the development of that wondrous instinct which guides them in such flight; nor can we gaze upon the meanest or commonest of our summer or winter migrants—the little

Flycatcher or the common Redwing—without seeing what a secret power these little birds possess—a power which man cannot understand, and cannot acquire, but which is to them an infallible guide in their journeys across trackless seas and untrodden lands.

T. MARSHALL.

The Winter Life of a Cuckoo in England.

IT seems to be a generally received opinion that our annual visitant the Cuckoo, whose cheerful note announces the arrival of spring and summer, must either leave our shores before the approach of winter, or share in the death common to so large a proportion of our insect and vegetable life. It is certain that few of our bird-fanciers have succeeded in preserving one alive during the winter months. That they may be kept alive is proved by the existence of one now in possession of the writer.

This bird was taken, in a half-fledged state, from the nest of a hedge-sparrow, early in the month of June. The first food provided for him was a boiled egg, which pleased his juvenile palate,—bruised seeds and soaked bread were also given to him. After a few days, worms and raw meat were offered. These provisions were greedily swallowed, though for some time he declined the trouble of feeding himself. During the severe weather when worms could not be procured, raw meat was preferred, but cooked meat, vegetables, bread and butter, indeed, almost anything was devoured. On Christmas-day he dined off turkey and plum-pudding. Hot buttered crumpet is a favourite dish. The bird is extremely tame, the feeling of fear towards any of the household seems quite unknown. As the door of his cage is frequently left open, the cat, attracted by the smell of meat, sometimes ventures to put her nose in, and is rebuked

with a peck from his beak. Whenever a clatter of plates, or knives and forks, is heard in the kitchen, an answering note is heard from the cage: the Cuckoo descends from his perch, and should the door be closed, knocks his head against it until a friendly hand attends to his wishes. His eating is not confined to regular meal-times, but he is stuffing all day long: probably the reason so few have lived, is that they have never had enough given them to eat. The beak is long and appears adapted for picking out grubs and worms from the earth. The food is well shaken, passed several times through the bill, as if to soften it, then swallowed with a jerk of the head. These greedy birds, living on their natural food, must be of great use to the cultivator of the soil.

The crop of the Cuckoo is not placed in the position in which the crop of a bird is usually found, but further back, near the tail. M. Hérisson, a French anatomist, thought he had discovered this to be the reason why the bird does not hatch its own eggs, but a similar formation is known to exist in birds who perform their parental duties. White found it in the fern owl, and Blumenbach in some other birds. Though the Cuckoo whose history has been given still lives, the struggle of instinct at the usual time of departure, spoiled his beauty. At night he was constantly found with his wings spread, beating against his cage. Darkening the cage did not prevent it. The feathers of his long wings and tail were all broken. He has a cropped, queer appearance, and as the feathers show no sign of growth, the writer fears he will present a sad contrast to the brothers and sisters who have spent their winter under brighter skies in more genial climates.

S. E. B.

High Wycombe.

THE BUTCHER'S BROOM (*Ruscus aculeatus*).—This interesting plant (of the order *Asparagaceæ*) has been recently added to the Flora of the district of Wycombe. It grows in hedgerows near Cores End, Wooburn, where I saw it in blossom in February last. It is rather common at Hedsor and Cliefden, in the woods; but this is outside the Wycombe district.

T. MARSHALL.

Proceedings of the Society.

THIRD WINTER SESSION—1867-1868.

THIRD EVENING MEETING, JANUARY 7.—Held at the house of John Parker, jun., Esq., at his kind invitation. T. Marshall, Esq., read a paper on "The Migration of Birds," which will be found at page 184. This elicited much conversation, and some interesting facts were adduced. It was followed by a paper "On the Order *Leguminosæ*," by the Secretary, in which the marked characteristics of that important tribe were referred to, and several of its more common representatives described; this was illustrated by coloured engravings, as well as by Miss Chandler's dried specimens. The objects exhibited were: a case of Indian Butterflies, lent by Mr. Norris; beautiful specimens of the Argus Pheasant of the Himalayas, brought by Mr. Beck; dried specimens of New Zealand Ferns, brought by Mrs. Small; Star-fishes and other objects, by the President, etc. The microscope was then brought into use; after which the meeting dispersed.

FOURTH EVENING MEETING, FEBRUARY 4.—Held at the house of the Mayor, T. Wheeler, Esq., at his kind invitation. The Rev. W. Bramley-Moore read a paper "On the Stones of our Fields," which, beginning with the question "What's in a Stone?" proceeded to unfold some very interesting secrets relating to the origin of the common stones scattered at random over our fields; in fact, he extracted a very good "sermon from stones." Having several specimens before him, he discussed their composition and origin, and the mode by which they had been brought to our fields. Nos. 1 and 2—flints, impure varieties of quartz, formed probably by the aggregation of siliceous matter round some nucleus, *e.g.*, a sponge or shell, during the ages when the chalk was being deposited in the same sea. During the erosion of the chalk by the retiring waves these flints were washed out, and being better able to resist the action of the water were left behind on the ground thus left dry. The gravel pebbles so very numerous in the neighbourhood had all been thus washed from the chalk, and in most cases rounded by the action of water as No. 1 evidently was, while occasionally, like specimen No. 2, they retained their sharp angles, showing they had escaped this action. No. 3, a pebble, perhaps a fragment of some great nodule of flint, washed against others on the beach of a restless sea for ages until it achieved its present smoothness of form, then entombed in a deposit of Plastic Clay, and finally transported to its present

position by the action of water or ice. No. 4, a piece of sandstone similarly treated. No. 5, a boulder. A boulder is a piece of rock lying on the surface of a deposit totally different to its own. It came from the neighbourhood of Warwick and Worcester—that is the nearest deposit of its own nature. No. 6 and 7, fragments of conglomerate whose history may be briefly summed up thus—masses of flint were deposited—metamorphosed—extracted from their original birth-place, broken, rolled and ground—embedded in a fresh matrix, and bound up with natural cement. The lecturer then concluded with the hope that the history of wayside stones might prove of some interest to the members, and induce them to look with a more favourable eye on things which perhaps hitherto they had passed by as worthless. At the conclusion of the paper, which our space will not permit us to print *in extenso*, conversation ensued, during which several additional particulars were given, and examples brought forward, in illustration of what had been said. A paper, communicated by W. G. Smith, Esq., “On the Seeds or Spores of Fungi,” was then read by the Secretary; it will be found at page 179 of our present number. This was illustrated by specimens and diagrams. A third paper, entitled “A Brief Summary of the Birds occurring in Bucks and Berks,” was also read by the Secretary; this was communicated by Alexander Clark-Kennedy, Esq., whose work on the same subject is on the eve of publication. There was, as usual, an exhibition of objects, which included dried local Wild Flowers (*Cruciferae* and *Labiatae*), fossils from the London Clay, shells, etc. The President exhibited various objects under the microscope, the *Æcidium* on the leaf of the Dog Violet eliciting much admiration. The meeting, which was very well attended, separated at about 10 p.m., the usual votes of thanks having been given.

FIFTH EVENING MEETING, FEBRUARY 25.—Held at the house of Mrs. Small, by her kind permission. The Secretary read a paper “On Forget-me-nots,” referring to the plants which had, at various times, been known as such, and describing the various species of the genus *Myosotis*: this will be found in *Science Gossip* for next month. This was followed by an amusing paper, “On the Folk-Lore of Frodsham, Cheshire,” communicated by Mr. J. F. Robinson, of that place. Many of the superstitions recorded are somewhat generally distributed: *e.g.*, ill luck attends spilling of salt, as well as the cutting of the finger nails on a Sunday. The President delivered an interesting address, “On Molluscs,” in which he described the marvellous construction of the snail shell, and advocated the eating of snails as equal, if not superior in flavour, to the edible Fungi patronised by the Secretary. Among the objects exhibited were two cases of Land and Fresh-water Shells; a collection of Seaweeds; a case of Wycombe Ferns, and another of Butterflies: several books and papers were

also on the table. Under a binocular microscope, brought by the Rev. W. Bramley-Moore, were exhibited some young trout, lately hatched, in which the circulation was shown. The President exhibited, among other objects, the beautiful stellate hairs of *Alyssum spinosum*, and other plants; the Two-wheeled Rotifer (*R. vulgaris*); the feather of a Humming-bird, etc. The meeting, which was very numerously attended, did not break up until nearly 10 p.m.

SIXTH EVENING MEETING, MARCH 19.—Held at the house of the President, at his kind invitation. The Rev. W. Hunt Painter, who had promised to read a paper, was unavoidably prevented from attending; and the only paper read was one by T. Marshall, Esq., "On the Migration of Birds," being an extension of one previously delivered: on this occasion the winter migrants were chiefly referred to. The President gave an interesting Geological lecture, chiefly explanatory of the fossils on the table, which he had brought from the Isle of Portland, Weymouth, etc. Some very beautiful living Sea-Anemones, from the same locality, were much admired. The Secretary exhibited a specimen of *Daphne Mezereum*, from the newly-discovered locality near Walter's Ash. The meeting terminated with an exhibition of the microscope.

Correspondence.

We shall be glad to receive articles on any natural objects, the preference being always given to such as have a local interest. Notes on the popular names of, or traditions concerning, Animals or Plants, or on any subject connected with Natural History, will be welcome.

SCARCITY OF COMMON LEPIDOPTERA (see p. 170).—In the January number a correspondent, writing of the scarcity of Lepidoptera in the neighbourhood during the last season, invites observations from other localities. In this neighbourhood the small number seen was equally remarkable. I saw a few fine specimens of the Brimstone Butterfly (*G. Rhamni*), in the skirts of the Fawley Woods, and the Speckled Wood (*L. Egeria*) was plentiful as ever in every wood and copse around us. Later, the somewhat rare Painted Lady (*C. Cardui*) appeared in greater numbers than I have seen for some years, and I could have secured fine specimens in the lanes and hedgerows. Of

others, usually more generally distributed, the falling off was very noticeable. I have no doubt the cause was attributable to the ungenial spring.

Henley. H. STUBBS.

I see in the Correspondence pages a notice of the scarcity of common Lepidoptera last year. In September a friend wrote me from Hounslow that during his fortnight's holiday there he had scarcely taken anything: one Clouded Yellow, and two or three Small Tortoiseshells were, I believe, all, though, unfortunately, I have not preserved the letter. In July, however, I did not notice any scarcity at home (Fowlness, Essex), there being the usual numbers of *Urticæ* and *Atalanta*, also *Janira*,

Tithonus, *Pamphilus*, *Alexis*, and *Linea*. I did not see any Peacocks, or Painted Ladies, or Walls,—these, with the Large, Small, and Green-veined Whites being our only *Diurni* as far as I know. But Fowlness is an island, so that there might be reasonably expected a paucity of Lepidoptera. W. H. D.

WATER CROWFOOT.—We shall be much obliged to any of our Buckinghamshire readers who will forward us *fresh* specimens, in blossom, of any of the forms of this ornament of our ponds and streams. Address: JAMES BRITTEN, High Wycombe.

THE MOONWORT (see p. 160).—In Mr. Ulyett's paper "On Ferns" he speaks of the Moonwort (*Botrychium Lunaria*) being reported to grow in the neighbourhood of Wycombe, but not confirmed. It is found on Nuffield Common in our neighbourhood, but from its diminutive growth is hard to detect. I have tried unsuccessfully to grow it in my fern border, but although I cut out a considerable portion of soil with it, it has dwindled away. Henley. H. STUBBS.

BURNHAM BEECHES.—A correspondent writes—"I shall be glad if you will call the attention of some of the members of your Society—especially those who devote themselves to microscopical pursuits—to East Burnham Common. On this, by the side of the Beeches, is a large pond, some eight or nine feet deep at the south end, and at the north gradually merging from marshy land into water. The north end of the pond is full of Bogbean (*Menyanthes trifoliata*); but what I especially noticed was the very great number of *Diatomaceæ* and other low forms contained in the mud, etc. I brought away some of the sediment, with the intention of mounting some slides, but other matters intervened, and prevented me from doing so. I am sure, from the locality, that a very great deal

might be done there by any earnest worker,—quite as much as at Keston Common, which has been so often noticed in *Science Gossip*."

THE MORELL (*Morchella esculenta*).—At fig. 14 will be found a representation of this delicious fungus, which we give in the hope that some of our readers may be induced to test its good qualities for themselves. It occurs in two or three places in our neighbourhood, but is uncertain in its appearance; for the locality which in 1866 furnished a large supply, last year only yielded three or four specimens. It may be cooked in various ways. We usually cut off the stalk, and then divide the *pileus*, or top, into two or more pieces, according to the size of the specimen, carefully washing it to remove insects, which, it must be admitted, have a great *penchant* for hiding in the holes and corners which present themselves; then fry the pieces with butter, adding pepper and salt according to taste, and serve on toast: a delicious breakfast dish is the result.

NEW LOCALITY FOR THE MEZEREON.—On March 17th, while staying at Walter's Ash, I wandered into the Bradenham woods, and having met with a gamekeeper, I enquired of him whether the Mezeron grew in the woods. He said he knew a place where he had seen it two years ago, and kindly took me to the spot, where I found eight fine plants: one was quite as large as is usually found in gardens, and equally full of blossom. They were most conspicuous amongst the sober hue of the dead leaves and fresh budding spring flowers. The spot is very secluded, and no path being close, they have escaped the notice of the passers by. The *Daphne Mezereum* is found in several localities about Wycombe, and being very rare, is a most interesting plant to the naturalist; the pretty spike of rich pink flowers tipped with the bright green leaves makes it one of the handsomest of the British Flora.

R. M. BOWSTEAD, M.D.

Vol. II. No. VII.]

[PRICE SIXPENCE,
Or 2s. per annum, post free.

THE

QUARTERLY MAGAZINE

OF THE

High Wycombe

NATURAL HISTORY SOCIETY.

EDITED BY JAMES BRITTEN, HON. SEC.

N.B. As the issue of this Magazine will terminate with the next number, it is requested that no subscriptions for another year may be sent in. Those already due should be sent to the PUBLISHER without delay.

The concluding number will appear on June 1, and will contain title-page and index for Vol. 2.

CONTENTS.

	PAGE
The Effect of dry Weather upon Water Plants....	ROBT. HOLLAND 145
The Ichthyosanrus	HY. ULLYETT 148
Hollow Lane	" 153
Additions to the Wycombe Flora—1869	JAMES BRITTEN 157
Buckinghamshire Botany	" 157
Proceedings of the Society	" 166
Notes, Correspondence, &c.:—Late Swallows, &c.—Wild Swans in Buckinghamshire.—Curious capture of a Tench.—Cats taking the water.—Plant new to the County.—Names of Animals	167

MARCH, 1870.

WYCOMBE:

PRINTED FOR THE SOCIETY BY W. BUTLER,
20, HIGH STREET;
AND SOLD BY ALL BOOKSELLERS.

Quarterly Magazine

OF THE

High Wycombe Natural History Society.

Bladderworts.

TWO, or at most three, small plants, so insignificant that it would be quite a chance if anyone who was not a botanist should observe them, and, as far as we know, of not the least use to man, constitute the British representatives of the genus *Utricularia*.

The Natural Order to which they belong is a very small one, and contains, besides these Bladderworts, only three more genera, of which the *Pinguiculas*, or Butterworts, are also British plants. The Order is best known by the pretentious name *Lentibulariaceæ*, but as this is derived from a discarded synonym of the Bladderwort, it would surely be better to call it after *Utricula*—*Utriculaceæ*.

Perhaps some one may think that if they are so very insignificant, they are not worth writing a paper about; but when we come to know these little plants, we find that they recommend themselves even by their absolute beauty; and when we come to study their manner of growth and their admirable structure, we find that, like all plants in which there are special contrivances to ensure a special end, their history is far more curious and interesting than that of many larger and more showy plants.

I intend, in this paper, only to describe our British *Utricularias*, but I cannot help just mentioning one South American species, because its history is so very remarkable, and illustrates very well some of the peculiar habits of the tribe. In the Organ Mountains in Brazil, there are found large species of *Tillandsia*, plants of the Pine-apple Order. The large leaves of these plants, clasping around the stem, form natural reservoirs in which the rainwater collects, just as we see in the leaves of the teasel; and one species of *Utricularia* is said to be found growing *only* in these watercups. In this strange situation the plant flourishes, and propagates

itself by sending out runners on all sides, which take root in the cups of other *Tillandsias* growing near, uniting many of them in a network of *Utricularia*. It is a plant much larger than our British species, and must be very beautiful, for it sends up long flower stems which support large blossoms of a purple colour.

Our *Utricularias* are also waterplants—so truly waterplants, that they do not even take root in the soil, or mud, but float in water just below the surface. Books upon botany describe their “root” as being “much-branched,” but for my part I have never been able to find any root at all, at any stage of their growth. The fact is they are root-less, and only float about as I have stated, deriving all their nourishment from the water by means of their finely-cut leaves. Probably the lower leaves of the plant, discoloured from incipient decay, have been mistaken for roots. It is quite *possible*, however, and extremely likely, that all the leaves act by absorption precisely like roots, just as, in some leafless plants, roots are modified in appearance and structure to serve the purposes of leaves.

Three species are described, or perhaps more properly two, with an intermediate one, which may be a variety, or, it may be, a hybrid, between the other two. They are all found in ditches or in deep pools, floating just below the surface of the water. The commonest and largest species, *Utricularia vulgaris*, may be taken as the type of the genus, as regards British kinds. It is of tolerably frequent occurrence, but I think, often overlooked from the fact that sometimes for several years it flowers so sparingly as to escape notice. It consists of slender, very brittle, trailing, branches, one or two feet in length, which are densely clothed with very elegant pectinated leaves. The leaves are, in fact, nothing more than the ribs and veins, for being altogether submerged, the plant has no necessity for breathing pores, nor for the fleshy portion with which the stomata communicate. It is therefore not developed in the ordinary form, but is converted into a number of very elegant little bladders, or *utriculi* (whence the Latin name of the plant), which contain air and are supposed to be the organs by which the plant is buoyed up to the surface

of the water. The little bladders themselves are somewhat flask shaped and flattened, and are very beautiful when seen through a magnifying glass. They are placed upon very short stalks upon the secondary veins of the leaf, close to the mid rib, so that there are two rows of them on each leaf, one row at either side of the midrib. A vein of the leaf passes up the front of each flask, giving rigidity, and branching round the orifice, which it greatly strengthens, terminates at the sides and back of the opening in two or four bristles. The mouth of the flask is closed by an extremely delicate, almost invisible, membrane, having a minute slit in front, through which gases, no doubt, escape.

The flowers are extremely pretty; they are bright yellow, growing four or five together in a raceme, which shoots up with a stalk some five or six inches above the water. In form they are not very unlike the flowers of a *calceolaria*, being two-lipped and having a short spur.

Utricularia minor is a much smaller species, not by any means so common, and generally found in small pools of water on peat bogs. The flowers are small and pale in colour, and as far as I have been able to observe, the plant is more frequently found in a flowerless state than even *U. vulgaris*.

The third species, or variety, or hybrid, *U. intermedia*, I cannot describe from actual observation. It seems to be rare, and to be characterized by the leaves being tripartite. The vesicles are said to arise from branched stalks and not from the leaves.

A strange misapprehension exists as to the economy of these plants, and their method of propagation. Almost all authors have taken it for granted that the earlier observers were correct, and have copied one from another, as is too often the case, without verifying for themselves; and the history of the Bladderwort has thus become invested with a halo of romance, very pleasant to read, but untrue in many particulars. The *Intellectual Observer* of October last publishes a translation of a paper by Dr. Schnetzler, in which he says of the genus *Utricularia*, on the authority of De Candolle:—"These utricles are rounded, and furnished with a species of moveable operculum, or lid.

In the youth of the plant they are full of mucus heavier than water, and the plant, weighed down by them, remains at the bottom. Towards the season of flowering, the leaves secrete a gas which enters the utricles, and drives out the mucus, opening the lid for its escape. The plant is thus supplied with a quantity of air-vessels, which elevate it gradually, and cause it to float on the surface. The process of flowering takes place in the free air; and when it is finished, the leaves again secrete mucus which replaces the air in the utricles, weighs down the plant, and causes it to descend again to the bottom of the water, where it ripens its seeds in the situation in which they should be sown."

I think, if anyone will take the trouble to observe for themselves, they will find that the sentences in italics do not describe very accurately what really takes place. I cannot say certainly that the plant *never* produces seed, or that that seed never germinates at the bottom of the water, "in the situation in which it should be sown"; but it seems very unlikely that the seeds should *germinate* in the mud, when at every other period they have no roots at all, nor any connexion with the soil. There are many years, too, in which the plant never flowers, and yet it will be quite as plentiful the next season; and I am quite sure that in the *majority* of cases it is propagated, not from seed, but from the terminal buds, which remain dormant during the winter. These buds have been noticed by some authors.

The branches of *Utricularia* grow rapidly at the point, and as each delicate leaf unfolds, the bladders, at first quite small, will be found at once filled with air. The lower part of the plant is constantly decaying away, and as the bladders are only composed of a thin membrane, they decay even sooner than the rest of the leaf, so that the lower discoloured leaves often look as if they had never supported bladders, and may easily be mistaken for roots. Thus the plant constantly increases at one end and dies at the other till the time of flowering, which is in July and August. In all probability the seeds are ripened sufficiently to germinate whilst they are exposed to the action of the sun. After flowering the plant ceases to grow, either on account of the increasing cold-

ness of the Autumn nights, or because its energies are expended with flowering, and it decays away very rapidly, leaving nothing but the terminal buds, which consist of unfolded leaves and retain their vitality. As no more air-bladders are developed, the buds or *gemmae* sink to the bottom and remain dormant and safe from injury from the weather during the winter. They are about the size of small peas, quite compact, and might easily, as no doubt they have been, mistaken for seeds sown in the "proper situation." About March or the beginning of April, the buds again begin to grow, and the leaves to open out, and as soon as sufficient air-vessels are formed, the plant rises to the surface of the water. At this time a sweep with a butterfly net will usually bring up some of the green buds, which grow well in an aquarium, where the opening of the leaves, and the development of bladders, and the rapid extension of the stem, are sights well worth watching.

It is probable that the bladders also have another and very different duty to perform, not less important, perhaps, than that of floating the plant in the water; namely, the capturing of insects which are destined for the plants to feed upon. Certain it is that very small water insects are often found imprisoned in the bladders—the opening allowing them to enter, but from its construction, preventing their escape. The *Utricularia* it has been seen, cannot obtain mineral matter from the soil, having no roots; nor gaseous food from the air, having no stomata: and the animal food thus obtained may supply certain elements which it could not derive from the water; and the *Utricularia* may be added to the list of the highly interesting carnivorous plants.

Perhaps some of the readers of this Magazine may be able, during the present summer, to study the habits of the Bladderworts—to ascertain whether they, as a rule, ripen any seed at all; if so, how and in what medium the seed germinates, and thus to clear up a somewhat obscure point in the history of these beautiful and curious waterweeds.*

ROBERT HOLLAND.

* *U. vulgaris* is recorded as growing in the ditch in the meadow by the Suspension Bridge at Marlow; and in the river ditch near Fawley Court; we have found it in the ditches and ponds at the foot of Winter Hill, Berks. *U. intermedia* has been doubtfully recorded from Burnham Beeches. ED.

In the Hills above Henley.

THE neighbourhood of Henley-on-Thames, with its noble river, and the long range of wooded hills ascending from the rich valley, offers much interest to the lover of nature. In the valley and on the stream may be found the Snow Flake, the Procumbent Marshwort, and Adder's Tongue, the Water Villarsia, Great Bladderwort, Water Violet, Frogbit, and Flowering Rush, and on its food plant the Willow Herb, profusely lining the banks, may be found the grotesque larva of the Elephant Hawk Moth. The Sphynxes are fairly represented in this valley. In my cabinet,—the capture of many years ago, and marred by unskilful hand,—the rarest of my collection is *C. Celerio*, taken at rest on a window sill; with *D. Galii*, which I bred from larvæ found on Bedstraw; *S. Convolvuli*, of which, some eight years ago, I obtained several fine specimens, and have never since heard; *S. Tiliæ*, frequently found in the larva state on the noble lime trees of Fawley Court; *S. Ocellatus*, *S. Populi* and *A. Atropos*, and profusely *C. Porcellus*, *C. Elpenor*, and *S. Ligustri*. *Nupta*, from the prevalence of willow, is plentiful, as many as a dozen having been taken at "sugar" in the course of an evening. *Colias Edusa* abounded in the lucerne fields some years ago, but of late has not occurred; and in one instance the scarce *Hyale* has fallen to my net. On the chalk hills which on the Berkshire shore commence the Chiltern range, *P. Corydon* and *P. Agestis* are found, and *S. Tages* and *C. Jacobææ* swarm, the showy larvæ of the latter denuding the golden Ragwort of the bottoms. Ascending the hill on the west, and plunging into the backwoods of Lambridge, the entomologist will soon find ample use for his net. The *Deprana* are well represented here, three out of the four occurring,—*D. Falcataria*, *D. Hamula*, and *D. Unguicula*, the latter profusely in the limited sphere of their locality; the second rare,—one only having come into my possession. The Fritillaries count half, *A. Selene*, *A. Euphrosyne*, and *A. Paphia* (tradition

avers that *A. Lathonia* has occurred)—the graceful, floating, sweep of *Paphia*, and the golden glitter and silvery sheen of its wings in the sunlight, are “things of beauty” to be remembered ever after. In the margin of this wood I discovered last year, a new locality for *A. Galathea*, and by the capture in successive seasons of *Bloomerii*, a wider range may be ascribed to this lovely *Geometra*. The best of the Flora of this wood consists of Winter Green, Mountain Speedwell, and Upright Fly Honeysuckle; the first of these in large masses, the last a single specimen and very doubtful native. Emerging from the wood we come on the old domain of Grey’s Court, the gabled roofs and massive towers of the mansion crowning the broken ascent of the Park. The thorn hedges enclosing it are marvels of antiquity, and grey with the moss and lichen of centuries. The high-road to Rotherfield Greys leads between these hedges, and I well remember when driving through some ten autumns ago, the delight of my companions as cloud after cloud of the gorgeous *V. Atalanta* rose from the ivy blossom which clothes them, at our approach. In a copse at the head of the wood the earth is flecked in the early spring with the Snow-drop, and in the underwood above the park,

“Thick as leaves in Vallambrosa,”

the Daffodils, in the clearings, dazzling the eye with their golden masses. Preferable, because more dispersed, is another habitat of this flower in the wood at High Moor; passing across a secluded meadow hemmed in on two sides by woods, and with a dark pool overhung by trees in the centre, the scene of a darker legend, we enter this wood. In its green alleys and dells, and peeping out from amid the decaying herbage of the past year, the Daffodil is a graceful flower, the delicate green of its foliage aiding its beauty. The late Miss Mitford,—whose magic pen could confer immortality on a tuft of early Primroses, or a patch of Woodsorrel, and who, like Gilbert White, has made a secluded village famous for all time,—writing some twenty years ago of a visit to these hills, enumerates, among their denizens, the Orchids and Fungi as extensively prevalent; and also refers to the frequent occurrence of the strange compound, known as agglomerate.

It is even so. I have obtained several blocks, and one remarkable mass in the wood leading up to Stoke Row Common is especially noticeable. It is in the vicinity of a public well, sunk some years ago by an Eastern Maharajah, for the benefit of the poor of this elevated spot, and the airy columns of the temple erected over it, and the tutelary elephant, contrast strangely with the old-world mass of hoary stone.

North of this, in the short turf of Bix Common, we tread on the Buckshorn Plantain, and among the bushes around the Black Adiantum, the Hairy Green Weed, the Greater Dodder, and the rare Imperforate St. John's Wort are found. In the tangled underwood hard by, startling, in the early year, by its contrast with the dead herbage of the past, the dark and sombre foliage of the ill-omened Green Hellebore is seen; and further on, in Page's Bottom, I have obtained in successive seasons that most lovely and delicate of Ferns, the Oak Polypody. Above, on Maidens' Grove,—hiding under hazel bushes, the

“Four round leaves and one green flower,”

of Herb Paris are seen. The Evening Primrose and the Oxlip flourish here; and in the extensive Nettlebed woods, the Deadly Nightshade, the Lily of the Valley, Solomon's Seal, and the Columbine. A bank here, bearing its name, is gay in the early spring with the delicate peach blossom of the Mezereon; in the old and disused clay pits, the Hard Fern obtains luxuriantly, and farther west on Nutfield Common the local Moonwort. In a paper where brevity is indispensable, I have only briefly indicated the Flora of these hills; the same exigency of space will be my excuse for the contracted record of Lepidoptera, and also the omission of the proper names of plants.

Henley.

H. S.

SPAWNING OF FROGS.—A friend tells me that he saw, about the middle of last month, frogs spawning on Erringden Moor (lat. 53deg. 43min. N., long. 1deg. 62min. W.), 1200 feet above the sea level at Liverpool. Is not this somewhat peculiar, considering the latitude and altitude?

W. H. D.

The Birds of Cookham and the Neighbourhood.

THE WOODPECKER.—Continued from page 178, Vol. I.

I HAVE referred to the early breeding of the bird, and can add a curious fact which occurred lately. About the middle of last November the weather was very mild, and on the 11th, Mr. Briggs' attention was attracted by a vigorous tapping on a tree above his head. Looking up, he perceived a Little Spotted Woodpecker hard at work, and noticed it on the two following days, still hewing out the hole. On the 13th the hole was made, and the birds passed inside. There they continued their labours, every now and then a little head appearing at the mouth of the hole, and dropping a piece of bark down. In this way the ground at the foot of the tree was soon strewn with chips, but a frost coming on on the 15th, and more hard weather following, the birds were driven from the undertaking, and the male shortly after happening to wander into Lady Young's grounds, was shot, and is at present in my collection. Mr. Briggs is of opinion that the female will find another mate, and will recommence building operations with the return of fine weather. Should this be realised, I shall not fail to notice the occurrence in the Society's Journal.

Sub-fam. GECININÆ.

Gecinus.

23. *Gecinus viridis.* The Green Woodpecker.

This bird is very scarce in the neighbourhood of Cookham, where it is known by the name of "Whitoll,"* or some such name, but it is difficult to understand the villagers, all of whom pronounce it in a different manner. It is occasionally observed on the tall elms at Formosa, where a fine bird was obtained for Mrs. De Vitre's collection. The species is particularly abundant in Huntingdonsbire, where I have often counted as many as twenty in the course of an afternoon's walk. I have lately procured a very beautiful male with the red cheek-mark strongly developed, which I owe to the kindness of Mr. Lynn, the head gardener at Lord Boston's. It was shot, I believe, at Billingbear.

* See vol. 1, p. 73.

*Sub-fam. YUNCINÆ.**Yunx.*24. *Yunx torquilla.* The Wryneck.

As I have noticed under the head of the Cuckoo, this bird is much commoner some seasons than others. Mr. Briggs has often remarked the curious way in which the Wryneck contorts his neck, but he says the most remarkable instance of this peculiarity he ever observed was in a wounded bird, which twisted and elongated its neck in an extraordinary manner. He has found its nest at Formosa more than once.

*Fam. UPUPIDÆ.**Upupa.**Upupa epops.* The Hoopoe.

Mr. Briggs has seen one specimen of this bird killed in the neighbourhood some years ago. Another was shot at Wallingford in June, 1867.

*Order PASSERES.**Fam. LUSCINIDÆ.**Sub-fam. LUSCININÆ.**Luscinia.*25. *Luscinia philomela.* The Nightingale.

The success which has of late years attended the efforts of those who have endeavoured to keep the Nightingale in confinement has no doubt contributed to the increasing rarity of the species. Of the thousands sent annually to London, very few certainly live long, and of those who survive the period of the autumnal migration, by far the major part succumb to the first severity of the weather. We do, however, meet with birds who have managed to live through our English winters, and no one whom I have met with is more successful in preserving them alive than Lovegrove, the turnpike keeper on Maidenhead Thicket, at whose house there are almost always sure to be some.

There are some parts about Cookham where the Nightingale comes every year to enliven our ears with its beautiful song, and from Formosa they may be heard in the Cliefden Woods any summer evening. I remember once standing in Mr. Burrows' grounds, and distinctly counting six nightingales singing, some

in Lord Boston's and the Duchess of Sutherland's woods, one in the tall elms skirting the Formosa estate, and one close to me on Odney Common. Often, when returning with Mr. Briggs from some ornithological expedition, we have heard quite late at night the Nightingales trilling sweetly, and answering each other, in the Cliefden Woods, when naught else broke the stillness of the evening, save the occasional hoot of the Tawny Owl

At Formosa two pairs of Nightingales bred for several successive years in the laurels skirting the carriage drive, but the nests being taken by one of the garden boys two or three years ago, the birds have not built there since. The specimen in Mrs. De Vitré's collection was shot on the estate, but a very beautiful male in my own collection was sent to Mr. Briggs by Mr. Bye, then gardener to Mrs. Llewellyn, of Wooburn. The poor bird was picked up dead one morning, having flown against the glass window of the conservatory. He had been for several days on the grounds, delighting everyone with his song.

Statistics of the number of Nightingales and other summer warblers caught annually near London, and brought to the bird-fanciers there, would be very interesting. I know of one man alone who had upwards of 200, all males, brought to him between the middle of April and the middle of May last year.

Ruticilla.

26. *Ruticilla phœnicura*. The Redstart.

The Redstart is not common near Cookham, and I have myself never seen a specimen. There are, however, some nice ones in Mrs. De Vitré's collection, and Mr. Briggs has shot several in the grounds at different times. Mr. Gould also obtained a female, caught off the nest in an old apple-tree on the estate.

When at Peterborough I often met with this species, having taken many a nest out of the old Cathedral walls; nor shall I easily forget the tiny holes they built in, and the trouble they gave us to get the eggs; while the scene which ensued when one of my schoolfellows got his hand in the hole, but could not draw it out until rescued by a mason with his chisel, is still fresh in my memory.

27. *Ruticilla tithys*. The Black Redstart.

The Black Redstart is a winter visitant to this country, and I am inclined to think, occurs more commonly than ornithologists generally are aware of, for at Mr. Kent's the taxidermist, at Hastings, I observed several pairs, all of which had been obtained in the neighbourhood. I have only one instance of its occurrence at Cookham, but I think there is no doubt of the species. Mr. Briggs tells me that a few years ago* in the depth of winter, he was out shooting with Stanniforth early in the morning, when his attention was drawn to a female Redstart (as he thought) sitting on a post close to them. It was snowing very hard at the time, and he pointed out the bird to his companion, remarking that it was the first time he had ever observed the Redstart in winter. On mentioning the circumstance to Mr. Gould, shortly after, that gentleman told him it must have been the Black Redstart. The female of this and the foregoing species do not differ so much as the males, and had it been the latter, no doubt could have entered Mr. Briggs's mind as to the species. A most interesting account of the habits and economy of the Black Redstart is contained in Mr. Gould's *Birds of Great Britain*, and will well repay the ornithologist who reads it. As it is too long to be copied here, I must give a little notice of the bird as observed by my friend, Mr. E. M. Young, of Formosa Cottage, which I extract from my paper on that gentleman's collection published in the *Naturalist*, vol. II. p. 186. Mr. Young observes:—"This little bird was not easily obtained. I shot it among the cedars of Lebanon, where its peculiarly shrill note attracted my attention. I had not seen it previously in Syria, but there seemed

* Through the whole course of this paper, and also in my contributions to Mr. Clark-Kennedy's "Birds of Berkshire," many birds are recorded with no *exact date*. The reason of this inaccuracy is, that up to the time of my going to Cookham and interesting myself about its Ornithology, no one had taken the trouble (Mr. Gould, who is always most accurate in that point, excepted) to preserve dates or memoranda, so that beyond the fact that birds occurred *a few years ago*, I am unable to give the date with precision. As, however, most of the birds shot are in the Formosa collection, or my own, and therefore of undoubted occurrence in the locality, I must appeal to Ornithologists generally to excuse any inaccuracies in the dates, great care having been taken in every instance to obtain the time of year, and particulars of the capture or observation of each species.—R. B. S.

to be several among the cedar-trees. Its cunning in keeping close to the thickest boughs, and dodging round them as often as I caught sight of its breast for a moment, was quite provoking. After a chase of about two hours, I was fortunate enough to secure the present specimen, not without a long hunt, for falling from a lofty branch it was caught and hidden by a fork in the tree, and I had almost given up the search in vain. Mr. Tristram shot the bird, I believe, in the same neighbourhood."

A female Black Redstart was obtained near Hampstead in April, 1868, and I saw it in Mr. Davy's shop in the Kentish Town road. He informs me that the bird-catchers had been aware of its presence in the neighbourhood during the whole winter. It was accompanied by a male who, however, up to the moment of writing has eluded capture. It is very probable that they would have bred in this country, had they been undisturbed.

Erythacus.

28. *Erythacus rubecula.* The Robin Redbreast.

The villagers of Cookham have a curious saying, that no Robin ever sees a third winter, as the old birds are always killed by their young. This is a new phase in the economy of the Robin; but as no one at Cookham has ever seen the young ones actually kill their parents, as far as I can ascertain, I hope very little credit is to be given to the assertion, which is, no doubt, an exaggeration arising out of the well known pugnacity of the species. It would seem almost preposterous to write another anecdote of the Robin's tameness, yet the following will, I believe, vie with any yet recorded, as an instance of its docility. The little bird made its appearance soon after we went to live at Cookham, and used to come on to the verandah every morning for crumbs, and having by his familiarity become a great favourite, he in his turn became a tyrant, and would not allow a Sparrow, Water Wagtail, Chaffinch, or any other applicant to approach the verandah for food. In the garden his excessive tameness became quite a nuisance, as he used to sit on the gardener's baskets, and take the fruit when it was thrown in, or if they were digging, he would sit on the spade and jump into the hole when the mould was turned out, and pick up worms. Once when Stephen was doing something

to a frame, and was resting his arm on the side, the Robin perched on his arm, not in any way timidly, but with the utmost confidence, and there sat and sung. Thinking he would fly, the gardener got tired of waiting, so he began to move his arm, when the little fellow fluttered up on to his shoulder, and was carried some little distance in that way before he flew off. The history of "Bobby's" pranks would fill pages, could I remember them all, but space will not allow me to write more. As is usual with pets, he came to an untimely end, being maimed in one of my brick-traps, into which he had gone some fifty times without being hurt; and as his broken wing did not heal quickly, we fear he fell a victim to a cat.

Fam. ORIOLIDÆ.

Oriolus.

Oriolus galbula. The Golden Oriole.

This bird has been observed once in the neighbourhood of Cookham by Mr. Briggs. He was walking on the estate at Billing-bear, when his ear was attracted by a note which he was convinced he had never before heard. Following the sound, he traced it to a thicket, where, by dint of crawling carefully along, he was able to come near the object of his search, and there sat a beautiful Golden Oriole, within a short distance of him. He was able to observe it undisturbed for two or three minutes, before it flew away.

Fam. TURDIDÆ.

Turdus.

a. Turdus.

Turdus viscivorus. The Missel Thrush.

The Missel Thrush visits Cookham in large flocks every October. On their first arrival, the birds betake themselves to the yew trees in the Cliefden Woods, descending in the early morning to the fields round Formosa. They are exceedingly shy and difficult of approach, and even in the sharpest weather are the hardest to shoot. The Missel Thrush breeds sparingly in the neighbourhood, and is one of the earliest to build its nest. I saw one in the early part of March, 1866, with the hen bird sitting hard, and scarcely a leaf to be seen on the trees.

To be continued.

R. B. SHARPE.

Proceedings of the Society.

THIRD WINTER SESSION—1867-1868.

The concluding *conversazione* of the present Winter Session was held, according to custom, in the Town Hall, on Tuesday, May 5th, and was a great success in every respect. Every branch of Natural History was fully represented, and the arrangement of specimens was very good. It would be impossible to catalogue all the objects exhibited; but the following were among the most noteworthy in their respective branches:—

ZOOLOGY.—A live Hedgehog, captured by Miss M. Vernon in Whittington Park, attracted considerable attention; a stuffed White Mole, lent by Mr. Wane, which was, we believe, taken in our district; bones of the African Elephant; a skeleton of the American Crocodile (*Crocodilus Americanus*); the head and jaws, with the molar teeth, of a young Indian Elephant; the shoulder-blades of a whale: the leg-bones (casts) of the *Dinornis maximus*, from New Zealand; skulls of the Bear, Hyena, etc.

ORNITHOLOGY.—This branch was one of the most fully represented. Stuffed specimens of birds in glass cases were lent by Messrs. Marshall, Simmonds, Browne, A. Lucas, Ratty, Saunders, and F. Wheeler: these included the Heron, Bittern, and Little Bittern, Kestrel, Green Woodpecker, Goatsucker, Short-horned and Brown Owls, Sea Swallow, Gull, Snipe, Water-rail, etc.: a specimen of the Goshawk (*Astur palumbarius*) shot near Stone, deserves especial mention, as the species is not included by Mr. Clark-Kennedy in his recent work on the birds of Berks and Bucks. There were two collections of British Birds' Eggs. Foreign Ornithology was illustrated by specimens of the Argus Pheasant of the Himalayas, lent by Mr. Beck; a case of Humming-birds; and some of the remarkable nests of the Weaver Bird, brought by Mr. Small from the Western Coast of Africa.

ENTOMOLOGY.—In this department our British Insects were far surpassed in size and colouring by a collection of Himalayan *Lepidoptera* lent by Mr. Beck. British Butterflies, Moths, Bees, and Beetles were shown by the President: and a case of West Australian Beetles was lent by Miss Abbott, of Wycombe Marsh.

BOTANY.—A table of living Wild Flowers, arranged by Miss Chandler, attracted much attention by its elegant appearance, and by the number of species which had been pressed into the service, all collected in our own immediate neighbourhood. Among the most noteworthy were the Coral-wort (*Dentaria bulbifera*), the Herb Paris (*Paris quadrifolia*), and the Wild Garlic (*Allium ursinum*). W. G. Smith, Esq., of London, to whom we have been already indebted for two interesting papers, lent a large number of drawings of our British Plants: these attracted considerable notice, the accuracy of the colouring, and the natural appearance of the drawings, being much admired. Miss Chandler's valuable herbarium, and a collection of British Ferns, were also on view. We must not omit to mention some very graceful bouquets, composed entirely of Wild Flowers, arranged with great effect by Miss Chandler and the Misses Giles.

GEOLOGY.—This section was, as usual, chiefly represented by the President's valuable collection. Representative Fossils of the Chalk, Upper Green Sand, Oolite, Lias, Gault, and Kimmeridge Clay were exhibited; with Corals from the Carboniferous Limestone of North Wales, and from the Devonian. Mrs. Woollams, Mr. Ratty, and others, contributed to this section.

The appearance of the Hall was greatly enhanced by some magnificent Azaleas, Deutzias, etc., kindly lent by the Right Hon. Lord Carington, and arranged by Mr. Miles; as well as by Cinerarias, etc., for the loan of which the Society was indebted to Mr. F. Wheeler. The bright hues of the flowers gave great brilliancy to the general effect. Many friends sent cut flowers in great profusion, and some very pretty bouquets were arranged; none, however, were more effective than that brought by Miss M. Vernon, composed almost entirely of Lilies of the Valley.

Besides the above named objects, we may mention the following :—A specimen of the curious Parrot Fish; some beautiful Corals, lent by Mr. Wheeler; a vessel of young Trout, hatched under the care of Mr. Saunders; specimens of Cotton-pods, from West Africa, in various stages of development; a series of British Reptiles, including the new snake, *Coronella lavis*, brought by the Rev. H. Rich, in illustration of his paper; and many others, too numerous to mention.

Among the books on the table may be named Morris's "British Birds" and "British Birds' Eggs," Wood's "Illustrated Natural History," Bowick's "British Birds," a volume of "English Botany," etc. Miss F. Charsley brought a copy of her recently published work "The Wild Flowers of Melbourne."

By the kindness of some of the lady members, tea and coffee were provided in the Council Chamber: after which, the President, the Secretary, members of the Committee, and others, ascended the platform: and the more formal part of the proceedings was commenced by the delivery of the Annual Address by the President, which we give *in extenso*. This was followed by a paper by the Rev. H. Rich, of Hardwick, Aylesbury, on "British Reptiles." The organisation of the class which they represent was carefully described; and the members of the various orders were duly noticed. The Secretary then read a paper, communicated by Robert Holland, Esq., of Mobberley, Cheshire, on "Water Lilies," which, although somewhat long, was extremely interesting. We much regret that our space will not permit us to do more than allude thus casually to two of the most interesting papers read during the Winter Session.

The Mayor, T. Wheeler Esq., then proposed that the thanks of the Meeting be given to the President for his paper, as well as for his exertions on behalf of the Society since its establishment in 1865. This was seconded by the Rev. J. Power, of Tyler's Green, and was carried unanimously.

A similar vote to the Secretary was proposed by J. Edwards, Esq., and seconded, in a flattering speech, by T. Marshall, Esq., and was likewise carried, *nem. con.*

Votes of thanks to the authors of the papers were also put and carried.

The President's magnificent microscope was then produced: but the Meeting dispersed almost immediately after the conclusion of the papers.

ANNUAL ADDRESS.

At the close of our third winter session it is my privilege to congratulate the members of our society on its continued prosperity and increase. The attendance at our evening re-unions has been exceedingly encouraging. There are many indications of a growing interest felt in the objects of our association. Our position is recognised in other towns besides our own. Our published transactions have a range wider than the confines of a small provincial town.

Our winter session was introduced by an important and interesting paper on "Local Museums." The design of that paper was not merely to afford a transient gratification which might pass away with the close of the evening's meeting, but to lead to an important and responsible undertaking—the establishment of a museum for the town and neighbourhood. Though the members of our society could scarcely entertain the project of founding and supporting a grand institution by their own unaided resources, yet they were ambitious of instituting a movement which might lead to the formation of a nucleus of good things, around which might gather sufficient interest and support that would eventually establish a prosperous municipal institution.

Interesting papers on the migration of British birds have engaged our attention on two separate evenings. The subject deserves attention. To my own mind, the migration of animals remains amongst the unexplained mysteries of natural science. It is easy to say that these interesting visitants are moved by a law of their nature—that they are under the unerring power of instinct, which they are constrained to obey as the controlling principle of their being. That only shrouds our ignorance, and expresses the simple fact in other language. What is instinct? We perhaps know what we mean when we use the term. But is it sufficient to explain a very wonderful though common occurrence? Instinct may constrain a bird when cold weather is approaching to desire a warmer climate. So instinct impels a hungry animal to desire food. But is it instinct that enables it to discriminate between food which it likes or dislikes? That is accomplished by it as by us, through the sense of taste. I can conceive of the Swallow, influenced by its instincts, feeling uncomfortable as the cold days approach. Instinct makes it restless. Instinct makes it gather with its fellows into companies. Instinct awakens within an overpowering appetency for warmer climates and more genial air. But is it instinct, or another sense, of which we are ignorant, that leads them towards the same quarter of the globe, that guides them with unerring certainty across a wide expanse of ocean, and lands them safe within the needed thermal zone. Analogous with the migration of birds, is that peculiar power possessed by the carrier pigeon of returning to its home. Far from

its usual place of abode you let it fly. It ascends to a lofty height as if to make observations. It sweeps round with one grand and graceful curve, and then like an arrow ejected from some mighty bow, sails swiftly straight to its wished-for locality. What is the impelling and guiding power in connexion with these remarkable movements? Is it instinct? Is it that they possess in active exercise another and to us an unknown sense, operating through organisations which we have not yet discovered, which may be in ourselves, but not at present developed. Few that have thought upon the subject can doubt but that there are properties in matter of which we know nothing, simply because we have not in active exercise physical organisation by which the mind can come in contact with those unperceived properties of the material universe. May not the lower order of creatures have organs of sense which to them are inlets of knowledge, but of which we at present know nothing? They may have not only five senses, but the multiple of five. There are facts which present themselves to the intelligent observers of natural phenomena which are difficult to explain. But this would explain much. Many theories have been advanced in reference to sensation in the insect world. Microscopists and physiologists have bent their endeavour to find out the same number of senses as possessed by man. Sight we know they have. Touch they certainly possess. Scent and taste are probably developed in a very high degree. Do they possess the sense of hearing? Acting on the assumption that the inferior order of creatures have the same, and only the same number of senses as men, some skilful microscopists have discovered or thought they have discovered in a small nucleoid cell at the base of the Bee's antennæ, an articulating membrane beneath which passes the antennal nerve, that connects that organ with the ganglionic mass of nerves which corresponds to the brain in the higher order of animals. Others have gone further, and have thought that the fan-like plates of the antennæ of the Chafer, which is covered over with these nuclei, is a kind of compound organ of hearing. Could we be sure, that the note of the Cicada, Cricket, or Grasshopper, was intended to bring the sexes together, it would demonstrate the fact, that they possess the sense of hearing. But do the five senses which man possesses seem sufficient to explain many facts in nature? Is it the organ of smell that leads the Vulture so many miles as by an unerring power, to the carrion of the desert, which must be devoured or it will throw around the miasma of death? Is it the sense of smell that brings the Moth with certain guidance to the sugar of the Entomologist or the honey of the flower? Is it the same cause that constrains and guides the Beetle or the Fly to the droppings of cattle, only a few minutes after it has been left upon the ground? Granting that the scent may extend to such a distance, it extends equally in all directions. But these creatures are drawn most certainly to that small spot in the wide circle from which the odour emanates. I

cannot help concluding that there is another sense possessed by them, which may be slumbering in our physical nature, which may hereafter be developed, but which would be useless or injurious to us now, and therefore is not bestowed. Here then, I link, if not an argument, a theory, that the feathered migrants possess a sense which man does not; that not possessing it we cannot understand it, or that in the outer world which through this unknown sense awakens perception in their mind. Such a sense would guide it as surely and safely to its appointed summer or winter place of residence, as sight guides us to any wished-for object or place. From what is probable in the inferior creatures may we speculate to what is probably in man. Is our nature fully developed? May there not come a time in man's future history, when instead of five senses he may have fifty, or five hundred, or more, and each of these senses would enable him to perceive and enjoy attributes and properties in the physical world to which we are now strangers, just as a man born blind is unacquainted with the glories and harmonies of colour. May not a sense or senses be developed in our physical nature hereafter, which may enable us not only to see distant worlds around, and so bring in faint enjoyment from these glorious orbs of heaven, but with superior organisation we might bridge over the ocean of space between these worlds and our own, and bring them so near to ourselves, that we could enjoy them as if we stood upon them. Thus would God's universe be indeed linked together, and distant worlds would not appear made in vain for man, but as part of his own inheritance they would seem intended as much for his personal happiness as the small planet that is now his home or his prison.

Allow me to direct your thoughts to a very different topic. "These are very beautiful!" said a lady friend, in reference to the gorgeous colours of a beautiful Humming-bird, "here I see attraction. But what beauty is there in these old bones?" Objects are beautiful or not according to our standpoint of observation. Nature's aspects are so varied, that minds with every shade and complexion of taste may find the most intense gratification from almost everything in creation. Is it mere external beauty that is sought for? Where is form or colour so exquisite as in the almost innumerable objects around us,—the golden tints of the insect, the inimitable hues of the bird, the exquisite beauty and graceful gentleness of the Fawn tribe. But is there no beauty that delights the mind besides that which is perceptible through the eye? Is there nothing that a mind enlarged and elevated can delight to contemplate besides that of mere external form? Are there no beauties of analogy or affinity? Are there no mental pleasures in connection with suggestion? Are there no great lessons of instructions? Are there no great general principles which the mind discovers or learns? Are there not sources of gratification and moral enjoyment, with which the mere gratification of taste will scarcely bear

comparison? These old bones—this giant tooth,—not only do they suggest to the comparative anatomist kindred forms, or to the imagination times long since gone by, when beings fierce and fearful had the rule of our world; but they help to establish our belief in the unity of creation, the oneness of the great all-creating Mind. While to the uninitiated all things around appear as a confused multitude of unlike and unlinked existences, to me, there is a glorious law of unity prevailing throughout. Whilst everywhere there is variety, and nowhere dead and dreary uniformity, yet everywhere we learn that creation has been formed after one general plan, the beau ideal of the Divine Mind. The little Water Lizard that sports as the plaything of childhood, and the massive Ichthyosaurus that preyed amidst the waters of the old world in bygone ages, were formed after the same general principles, though probably representatives of different creations, they are members of the same kingdom, and were modelled by the same hand. The skull of the great Kangaroo, and the lately discovered head and jaws of a small Marsupial of the Oolitic creation, were made after the same type, so that the unscientific observer can trace the resemblance and understand that they belong to the same family. But both of these bear the strongest scientific affinity to the monstrous skull of another and fossil Marsupial (*Diprotodon Australis*), which approaches in size to the massiveness of the elephant. Ye despised old bones, we delight to stand and gaze at you, and say with delight and wonder—"Can it be—that this slender and elegant bone which an infant's handling might be too rough for, and that giant head the remains of one who might have matched the Mammoth in strength, and more than matched him in agility,—are members of the same family and bound together by the closest affinities?" The unity of creation is a wonderful and glorious fact. Whether we seek for illustrations amongst these old bones which carry back our thoughts to ages long since forgotten in the lapse of time, or draw our examples from animals that live in our own day, these common types of creation not only proclaim, the hand that made me is Divine; but they teach us the unity of the Godhead—the oneness of that Mind that made and harmonised these various creations. Allow me, then, with all the enthusiasm of nature's lover, to urge on you attention to this glorious source of knowledge and enjoyment. Next to revelation God demands from us the study of His book of creation. The instructions of the Divine Redeemer teach us that His exalted and holy mind could fully appreciate the beauties of nature, and the instructions which all things around breathe upon the soul. Begin anywhere. The waving grass-blade—the fluttering leaf—the modest flower—the buzzing insect—the chalk quarry—the lightning flash—those twinkling lights above in the night season, that look down so laughingly and lovingly upon our world,—they are all waiting for your notice. They all invite your contemplation and study. They will all repay you for your en-

deavours to understand them. They are portals that open new worlds to your mind. They will shed pleasant gleamings on the path of life. They will meet you like old friends in your walks of recreation. They have gladdened the prisoner's solitary cell. "I have no taste for these pursuits," said one who passed through creation with his eyes shut. You have no taste simply because you have no knowledge, and will not seek to possess it. As "full many a flower is born to blush unseen, and waste its sweetness on the desert air," so there is many a mind with tastes and talents equal to the grandest study of natural phenomena, yet they have never been called into exercise. Pascal was so dull a boy at school, that his monk-teachers almost gave him up in despair. "Try him," said one "in Euclid," and thus developed one of the world's greatest mathematicians. O, commence the glorious study of nature's facts and laws. You know not what delights are in reserve for you. You know not what attainments you may make. You know not what facts you may discover. You know not what great principles you may eliminate or establish. Though we cannot all hope to obtain a world-wide reputation as astronomers, or be recognised in society as accomplished comparative anatomists; though we may not all be endowed with that wondrous mental power called genius, that reads as with the eye of inspiration the deep arcana of nature's unuttered mysteries,—yet if not original thinkers, we may follow in the track of those pioneers of thought and knowledge. Some men labour and others enter into their labours. A child may now understand something of those great principles which Newton's mighty brain elaborated out. The results of an Owen or Huxley may become our own, may fill us with wonder and pleasure, and may be enjoyed with comparatively little effort. Thus the founders of science and the disciples of science seem to stand on common ground, and gaze with common enjoyment on the glorious scenes that open to the mind.

"Oh, Nature! with delight I gaze on thee!
 For to my soul, thou'rt like the ladder seen
 By Isaac's dreaming son, a path direct
 By which the raptured vision can ascend
 From earth to heaven, from finite things to Him
 The Infinite, who from the boundless waste
 Of nothingness, or from the dark abyss
 Of Chaos, called them forth; since all I see
 Through all th' illimitable scenes of space,
 To me the indelible impression bears
 Of power and grace Divine."

FOURTH SUMMER SESSION,—1868.

FIRST FIELD DAY, TUESDAY, JUNE 9TH.

The proceedings commenced with a Ramble to Hollow-lane and Green-street, the members leaving the National Schools at three p.m. The attend-

ance was but very small, in spite of the earnest appeal of the Secretary. Among those present were the President, the Secretary, the Rev. H. Rich, Mr. Ramsay, and J. Parker, Esq. As usual, ample matter for remark was found in the many natural objects observed in the lane, and the old discussion regarding the origin of Hollow-lane, whether a watercourse, or a British road, was renewed. Among the plants noticed were *Valeriana officinalis*, *Asperula cynanchica*, *Anthyllis vulneraria*, *Linum catharticum*, &c. In returning to Castle Hill across the fields, various objects of interest were noticed.

After the Ramble the members who had joined it, as well as many others who were unable to share the pleasure, repaired to Castle Hill, at the kind invitation of J. Edwards, Esq., where they were refreshed with tea and coffee; after which the whole company adjourned to the lawn, where an elaborate and interesting paper "On the Present State of Geological Science in England," was read by Mr. Ramsay, a few illustrative remarks being added by the President. The Members then adjourned to the residence for the transaction of the special business of the Meeting. The following satisfactory Report for 1867—8, was read by the Secretary, J. Britten, Esq.:—

"The commencement of another year in the annals of our Society brings with it the customary routine of an Election of Officers, a *resumé* of our Proceedings, and a statement of our present position. The pleasant duty of reporting our progress has again fallen to my lot; and I trust that the Members will feel justified in concluding from the following statements, that the interest taken in the High Wycombe Natural History Society is not merely a passing one, but one which will grow and develope with each succeeding year.

"Although it is gratifying to reflect that our Society is gaining ground, I should not be doing my duty, did I not remark, in passing, on one somewhat important drawback to our position among similar Societies. The scanty attendance at our Summer Rambles is a thing to be regretted, not only in its immediate, but in its ultimate, results. The purport of these Summer Rambles is to afford matter for our consideration at our Winter Meetings: and a want of interest in the one must lead to a want of appreciation of the other. Nor is this all. One of the chief aims of a local Natural History Society is the investigation of the various natural objects occurring in its district; and, in proportion to the want of energy in such investigation, the Society fails in its object. An investigation of dried flowers, arranged fossils, or stuffed birds, and the listening to occasional papers, will never make us naturalists; as I have before remarked, Natural History is not a thing of books, or of dried and preserved specimens—a mere *hortus siccus* or dry museum—no, it is a *living* study—a study having its "sermons in stones," its "books in the running brooks." Our Rambles last year were to Hollow Lane, Marlow Road, Downley, Totteridge, and Green Street: but the attendance on each occasion was exceedingly small.

"We have, however, every reason to congratulate ourselves upon the success of our Evening Meetings, of which six have been held, in addition to the one in the Town Hall. The papers read were in no way inferior to those of the last Winter Session; and the objects exhibited were both varied and interesting. The following is a list of the papers read:—

On Local Museums	The Rev. W. Bramley-Moore.
*Additions to the Wycombe Flora, 1867	The Secretary.
*Our Ferns (communicated)	Mr. Ulyett.
*On the Migration of Birds (two papers)	T. Marshall, Esq.
On the Order Leguminosæ	The Secretary.
The Stones of our Fields	The Rev. W. Bramley-Moore.
*On the Seeds, or Spores, of Fungi (communicated)	W. G. Smith, Esq.
A Summary of the Birds of Berks and Bucks (communicated)	Alexander Clark-Kennedy, Esq.
On Forget-me-nots	The Secretary.
The Folk-lore of Frodsham, Cheshire (communicated), ..	Mr. J. F. Robinson.
*Annual Address	The President.
British Reptiles	The Rev. H. Rich.
Water-lilies (communicated)	Robert Holland, Esq.

Besides these, our President has given us two short lectures on Geology, and one on Molluscs. Our Annual Conversazione in the Town Hall was, I believe, generally considered a very successful meeting: the attendance was larger than on previous occasions, and the objects exhibited were more numerous. The Society tenders its best thanks to those ladies who kindly supplied tables on that occasion, as well as to those who assisted in arranging the objects, and to those who lent them.

"The Quarterly Magazine of the Society still holds its ground; and the number of subscribers has so far increased, that it was thought desirable to terminate Vol. I. with the last number published, and to increase the number of copies of forthcoming numbers. The papers published have not, judging from the reviews, been lacking in interest; five of those in the above list (marked *) have appeared in its pages: and some have been transferred, wholly, or in part, to other periodicals. When all subscriptions for Nos. 5—8 have been paid, the receipts will exceed the expenditure by 3s. 8½d., a result which is satisfactory, both as showing the increased appreciation manifested of the Magazine, and as justifying the Society in continuing its publication.

"The Magazine, however, has not been the only work with which the Society has been intimately connected during the past season. One of our members, Alexander Clark-Kennedy, Esq., has produced an interesting volume on "The Birds of Berks and Bucks," which bears internal evidence of the assistance rendered to its author by other members of the Society. Many of those who were unable to furnish facts for insertion, aided, by their subscriptions, the publication of the work. The paper "On Local Museums," by the Rev. W. Bramley-Moore, was published in pamphlet form, and a copy was presented to each subscriber to the Magazine. I may also mention my own "List of Buckinghamshire Plants," which I have largely distributed among botanists in the hope of obtaining assistance in rendering the work more perfect—a hope which has, to a certain extent, been realised. I have before stated my intention to publish, if possible, at some later period, a complete Flora of the county, but much remains to be done ere such completion can be even approximately attained, although some of our members, as well as friends residing in other parts of the county, have kindly rendered me much assistance.

"The project of a Local Museum for Wycombe, which excited much attention at our earlier Winter Meetings, has been temporarily abandoned: the one great obstacle to its fulfilment being the difficulty of obtaining a suitable room for the reception of objects. Indeed, much consideration would be necessary before we could commence to carry out such a scheme, lest we should attempt more than we could ultimately accomplish, and our labour be lost. I must confess that the President's experience, as well as my own, of country museums as at present existing, is anything but favourable to their establishment.

"Our Cash Account is still very satisfactory. Our actual receipts, with the balance from last year, have been £9 6s. 11d., and £1 5s. 0d. in addition is still due—while our outgoings amount to £5 14s. 8½d.—thus showing a balance in our favour of £5 7s. 2½d. The number of members is still steadily increasing.

"It will be of interest to many of our members to learn that our former Secretary, Mr. Ulyett, has at length succeeded in establishing a Natural History Society at Folkestone, which promises to become as flourishing as our own. Our best wishes for his success will, I am sure, be given.

"Our Fourth Summer Session has now opened upon us—shall we not make better use of it than we have done of its predecessors? Shall we, who, by becoming members of this Society, have pledged ourselves to its interests, do nothing to advance those interests? In the great vineyard of Nature none may stand all the day idle. It is not necessary that we should go far abroad in our search for objects of study—nor that we should attempt more than we can accomplish, and then fall back because we cannot *at once* master even the alphabet of our science. One family of plants—one group of insects, or shells, will occupy us fully for this season, and give us more to do than we can now even expect. We are told by some who speak in ignorance of our study, that these scientific pursuits lead to infidelity. Is this so? We know it is not. Every flower, every tree, every bird, every insect, every created object, helps to swell the great Benedicite, the mighty Alleluia, which goes up from the whole earth to its great Creator.

"The more advance we make, the more plainly shall we hear the voice of Nature, speaking to us, and calling us onward—leading us from one object to another—pointing out greater and greater wonders—taking us step by step, as it were, and at each step urging us higher. Then we shall hear her inviting us, as in Longfellow's beautiful poem, she invited the great French naturalist—

"‘Come wander with me,’ she said,
 ‘Into regions yet untrod,
 And read what is still unread
 In the manuscripts of God.’
 And he wandered away and away,
 With Nature, the dear old nurse,
 Who sang to him night and day
 The rhymes of the universe.
 And whenever the way seemed long,
 Or his heart began to fail—
 She would sing a more wonderful song,
 Or tell a more marvellous tale."

At the conclusion, the Meeting proceeded to the election of the Officers and Committee for the ensuing year.

T. Marshall, Esq., in a highly complimentary speech, proposed the re-election of the Rev. T. H. Browne as President of the Society, which being seconded by R. M. Bowstead, Esq., M.D., was carried by acclamation; and was briefly acknowledged by Mr. Browne.

John Parker, Esq., then more briefly, but in terms equally flattering, proposed the re-election of J. Britten, Esq., as Honorary Secretary. The Rev. J. Power, of Tylers Green, seconded the proposition, which was heartily adopted, and acknowledged. The Committee, T. Marshall, Esq., Dr. Bowstead, and F. Wheeler, Esq., were then, on the proposition of J. Parker, jun., Esq., and Mr. Butler, unanimously re-elected. A most cordial vote of thanks to Mr. and Mrs. Edwards for their hearty welcome and entertainment of the Society followed, which was acknowledged by Mr. Edwards. Thanks to Mr. Ramsay for his able paper were given and acknowledged, which concluded the business of the Meeting.

The Birds of Cookham and the Neighbourhood.

THE SONG THRUSH.—Continued from page 14, Vol. II.

31. *Turdus musicus*. The Song Thrush.

I would call attention to the migratory habits of this species, a fact probably unheard of by many of my readers, but one which I think will be found to be true. Mr. Briggs and myself have noticed that there always seems to be a gradual increase of Thrushes about the beginning of February, which continues until the breeding season has fairly set in. Professor Newton has written a short but interesting note on this subject,* in which he comes to the conclusion, after several years' observations, that the Song Thrush is a regular migrant. I quote a few of his remarks:—"Since the Autumn of 1849, my brother Edward and myself have paid much attention to the presence or absence of the so-called resident species of *Turdus*. The result of our observations is such as to leave on our minds no doubt of the regular migration of the Song Thrush, as far as concerns the particular locality whence I write (Elveden). Year after year we have noticed that, as summer draws to a close, the birds of this species (at that season very abundant) associate more or less in small companies. As autumn advances, their numbers often undergo a very visible increase until about the middle of October, when a decided diminution takes place. Sometimes large, but more generally small, flocks are seen passing at a considerable height overhead, and the frequenters of the brakes and turnip fields grow scarcer. By the end of November, hardly an example ordinarily appears. * * * * * Towards the end of January, or beginning of February, their return commences. They appear at first slowly and singly; but as spring advances, in considerable abundance and without interruption, until, in the height of the breeding season, they by far outnumber their more stay-at-home cousins the Blackbirds." I had never been witness to the autumnal gatherings of the Song Thrush till last year, when Mr. Briggs

* *Ibis*, 1860, p. 83.

and myself were astonished at the large number of Thrushes which were congregated in Cliefden woods about the beginning of October. An occasional Redwing being heard among them, we supposed them at first to be all of the latter species, and shot several in the course of a week or two, all of which, however, were the common Thrush, and it was not until the 8th of October that we shot our first Redwing.

32. *Turdus iliacus*. The Redwing.

The Redwing is a winter visitant, arriving very early. The two last specimens procured by Mr. Briggs for my collection will fairly illustrate the average time of their arrival and departure. A male was shot on October 8th, 1867, and another male on the 6th of March. In very severe weather numerous Redwings are frozen out, some dying of starvation and cold, while others become so weakened as to be run down and caught alive by the villagers. As a rule, however, they are very shy, feeding in flocks, and are not easily approached. One of them is generally stationed as sentinel at the top of a neighbouring tree, whence he gives notice of the first intruder.

b. Planesticus.

33. *Turdus pilaris*. The Fieldfare.

The Fieldfare is more numerous in some years than in others. It generally, too, arrives later than the Redwing, and, I think, departs earlier. Like the latter bird it is usually shy and difficult to shoot, but is often put to great distress by the frost, and when rendered tame by misfortune, falls an easy prey to the gun. Mr. Clark-Kennedy does not mention the local name "Pigeon-felt," by which I have often heard the villagers call it.

Merula.

34. *Merula vulgaris*. The Blackbird.

This well-known songster is common all the year round, although very much shot down by the gardeners in the neighbourhood. The Blackbird has a peculiar *penchant* for mulberries, on which fruit it feeds voraciously in company with the Starlings, but there is no bird so often seen on the lawn of an early

morning, hunting after worms, &c., as the present species, and the good he does in this way ought to be allowed to counter-balance the small pilferings of fruit which he commits at certain seasons of the year. I recorded in the *Naturalist* a beautiful piebald variety of the Blackbird which was shot near White Place by my kind friend Mr. Mills, of Cookham, who gave it to me. It was preserved for my collection by Mr. Joseph Ford, and is still in my possession.

35. *Merula torquata*. The Ring-Ouzel.

In the early part of March, 1867, a very fine male Ring-Ouzel was shot by a man at Cookham Dean and preserved for him by Mr. Briggs. This is the only occurrence of this bird in the neighbourhood that I am personally acquainted with; but my friend Mr. Brown, of Cookham Dean, informs me that another was shot some years ago near Stoke, which is, I believe, at present in his collection.

Having thus had the pleasure of recording the occurrence of all the rightly so-called "British" Thrushes near Cookham, I should like to add a word or two concerning the six species, whereby they may be easily distinguished when procured, for I have met with some persons who do not know how to distinguish between them. I have therefore drawn up the following short diagnostic table, after the same manner in which I am working out more difficult and elaborate groups of birds. These synoptic tables will always be found a very satisfactory help in the study of birds:—

A. Sexes similar.

- a.* Crown of head olive-brown, flanks yellowish-white.
 Largèr: outer tail-feathers tipped
 with white 1. *Turdus viscivorus*.
 Smaller: outer tail-feathers uni-
 form 2. *T. musicus*.
- b.* Flanks rufous 3. *T. iliacus*.

B. Crown of head blue-grey 4. *T. pilaris*.

C. Sexes different, crown of head black.

- a.* Beneath uniform black 5. *Merula vulgaris*.
- b.* With a white pectoral crescent-like
 band 6. *M. torquata*.

All these Thrushes are very closely allied, and seem to constitute a distinct section of the Palearctic species of the genus *Turdus*. This idea is also borne out by Dr. Selater, in his excellent paper on the "Geographical Distribution of the genus *Turdus*."* Moreover they exhibit close relations *inter se*, when every point of their economy is taken into consideration. To begin with, their style of nidification is similar. Then again their osteology *somewhat* confirms the arrangement proposed, although I cannot altogether agree with every conclusion arrived at by Mr. R. F. Tomes;† for instance, his separation of *Turdus torquatus* so far from *T. merula*, and again in the splitting off of *T. musicus* into a separate section from *T. iliacus*, an arrangement which, after Professor Newton's remarks, he would doubtless be willing to modify. We might have expected, however, that *T. viscivorus* would be found to present slight modifications in osteological characters, when compared with *T. iliacus* or *T. musicus*, as its habits present us with certain differences, added to which its egg, though somewhat allied to that of the latter bird, also differs. But the affinity between the two smaller birds will strike every one at first sight, and, according to Mr. Tomes, their osteology is also very similar. He has separated *T. musicus* under another division, solely on account of its supposed non-migratory habits, a fact which is now pretty satisfactorily disproved. But in its generally darker style of plumage, its general habits, and in the colour of the egg, the Redwing shows some slight affinity to the Fieldfare, next to which it is placed by Mr. Tomes; and again, though in this case very much further removed, the Fieldfare shows a slight affinity to the Blackbird.

The relationship between the two British species of *Merula* is again very close in some points of their economy, while in others they differ considerably.

Sub-fam. SAXICOLINÆ.

Saxicola.

36. *Saxicola œnanthe*. The Wheatear.

The Wheatear generally makes its appearance early in

* *Ibis*, 1861, p. 227.

† *Ibis*, 1856, p. 379.

April, at which time a few pairs are observed on Cockmarsh Common. I have never succeeded in shooting one myself, but in the Formosa collection is a fine pair; and Mr. Briggs has shot them at the above-mentioned time of year in the neighbourhood. In Leicestershire I used to find the Wheatear very common, and a "Utick's" nest was often found in our cricket-field at Loughborough Grammar School.

Pratincola.

37. *Pratincola rubicola*. The Stone-chat.

This bird, which commonly goes by the name of the "Furze-chat," is not uncommon in its favourite localities during the summer months, and may generally be found on Maidenhead Thicket. It has, however, never yet fallen under my notice during the winter, though Mr. Kennedy was fortunate enough to meet with a pair in January, 1866.

38. *Pratincola rubetra*. The Whinchat.

The Whinchat is sparingly found near Cookham during the summer, and, unlike the Stonechat, which affects the high ground, it is generally seen in the fields of standing grass, especially towards dusk. In such situations I have often shot it. With the Stonechat, it is often seen sitting on the telegraph wires, or on the palings by the side of the railway.

Fam. SYLVICOLIDÆ.

Sub-fam. MOTACILLINÆ.

a. Motacilla.

39. *Motacilla Yarrellii*. The Pied Wagtail.

This bird is met with all the year round near Cookham, and breeds plentifully. Nor is it particular in the choice of a site for nest, which is generally placed in the thick ivy climbing round the walls of the gardens at Formosa. I have seen one in a fig-tree against the wall, while another pair of birds selected a flower-basket on the lawn at Formosa, and built their nest in the mould. The Cuckoo shows great partiality for laying in the Wagtail's nest, the two latter above-mentioned being both visited by one of these birds. In the nest in the fig-tree I saw a young Cuckoo comfortably seated, while a cat destroyed the nest in the flower-

basket, and killed the old bird. Mr. Briggs remarks the extreme similarity of the Cuckoo's egg to that of the Wagtail, an assertion I can myself confirm from personal observation.

In the severe weather at the beginning of the present year Mr. Briggs was surprised to find a large flock of Wagtails congregated in the laurels near his cottage door. He estimates their number at about 200 to 250, and supposes that they were going to roost there, the cold being too great to allow them to occupy their usual place—the osier beds in the cyots on the river. In the winter they roost in flocks in these latter places, and as it gets dusk they may be seen trooping, singly, or in small parties of five or six towards their destination. If the weather continues severe, the Wagtails do not remain long, but leave, I think, for the South of England. At all events very few are to be seen in extreme frosts.

To be continued.

R. B. SHARPE.

On some Resemblances between Plants and Animals.*

IT seems somewhat startling for a beginner in botanical studies to be told that it is impossible to define with scientific accuracy the difference between plants and animals. You will, perhaps, say, "Why, it is the easiest thing in the world. An animal is alive, and moves about, and breathes, and eats, and sleeps; but a plant is fixed to the soil, and does none of these things." It is quite true that most animals move, breathe, eat, digest, sleep;—but I am going to show that plants also do all these, and more, too, that are the usual attributes of animals. I will, however, allow that it is quite easy to distinguish between *ordinary* plants and *ordinary* animals, though perhaps not quite so easy to set the distinctions down in writing. But plants are not all alike, nor are animals all alike. There are gradations in the chain of created beings; and, though all are equally perfect, because the work of the Great Creator, and are all equally adapted to live in the situations in which they are placed, all are not equally complex

* Read before the Society at the Fourth Evening Meeting (February 5th, 1867) of the Second Winter Session.

in structure; and we find plenty of forms of life that are so exceedingly simple, that we cannot possibly say whether they are plants or animals;—we can, in fact, trace the chain down through so many links, that we arrive at last, both in the animal and vegetable kingdoms, at forms in which all distinctive marks cease, at least as far as *our* senses and *our* knowledge go, and the two kingdoms seem to merge into one. I say “*seem* to merge,” for I think that there is a distinct line between animals and vegetables if our senses could only recognise it.

I am not, however, going to try to tell you the *difference* between plants and animals—I have given that up as a hopeless task long ago; but I am going to point out some of the resemblances between plants and animals, and I think you will find it a very curious subject.

Plants, like animals, are endowed with life—strange, mysterious life—of a lower type, perhaps, than that of animals; but on this point, and indeed on many points connected with life, we are very ignorant. One thing is certain, that the life of a plant is subject to very many of the same laws as that of an animal. External circumstances affect it in the same way. A fish that inhabits the water dies if brought into the air, and a land animal is drowned if placed in the water; so, a water plant, if it does not absolutely die when planted in dry ground, cannot thrive, and generally dwindles away, and a land plant cannot bear to be submerged. Nevertheless, plants are capable of adapting themselves to circumstances much more than animals can, and therefore I should suppose that plant-life is of a simpler type than animal-life, and the laws affecting it less intricate.

I once met with an instance, however, that by no means bears out what I have just been saying, and I cannot account for it. A pond containing waterlilies had been drained so nearly dry, that there was only a little soft mud at the bottom; but in this the waterlilies, instead of dying, grew with such luxuriance, sending up such forests of dark green leaves, and such profusion of lovely flowers, that I have never seen the like before or since. Why these waterlilies should have grown better out of their

natural element, I cannot say ; but, as a rule, plants, like animals, live best in those situations in which nature usually places them.

Another curious point of resemblance between plant and animal life, is that they are said to be affected in the same way by many poisonous substances. If poison is present in the soil or the air in small proportion only, plants become sickly, and we see the effects of the poison in the stunted appearance, the decaying ends of the branches, and the premature fall of leaves. But if poison exists in large quantity, the plants are entirely killed, just as animals would be ; and the strangest thing is that poisons act in both in the same way ; thus an irritant poison given to an animal would act by destroying the tissues of the body, and it would act in a similar way in a plant ; but a narcotic poison, which is supposed to act on the nerves, would take away animal life without destroying any of the tissues, and the same would happen with a plant,—life would be destroyed, but the substance of the plant would remain unchanged. No trace of nerves have ever been discovered in plants, as far as I know, but from the effects which narcotic poisons exercise, it certainly would be logical to infer that plants do possess some internal arrangement that is analogous to nerves in an animal. I have heard it said that chloroform will send a plant to sleep, and that a sensitive plant subjected to its influence will droop its leaves ; but I have not tried the experiment.

Plants resemble animals in growing *by the accumulation of matter deposited from food*. It therefore follows, as a matter of course, that plants, like animals, require to eat—though it sounds very strange to put it in that way. We are, however, familiar with the expression “food of plants,” which, meaning just the same, does not sound strange at all. A plant *must* have a due supply of food, and that of the proper kind, else it cannot grow. It is quite possible to feed plants, like animals, into different bodily conditions, by giving them different kinds of food. One kind of food will make an animal fat, another thin ; stimulating food will induce a bloated state. It is just the same with plants. One kind of manure will cause an exuberant growth of leaves, another

will induce the production of seed, a third the increase of different secretions. But I must now describe to you the way in which plants obtain their supplies of food. It is chiefly by means of their roots, which, though very varied in form in different plants, all agree in one particular, namely, that the very extremities of their fibres are looser in texture, often rather swollen and porous; and these porous ends of the roots, called by botanists "spongioles," suck up water from the soil, and whatever may be dissolved in the water. This fluid passes up through the substance of the plant into the leaves, where it meets with air (I shall have to tell you, directly, how this air gets into the leaves) and becomes changed in its nature just as the food of an animal becomes *digested*. The altered sap is then capable of depositing new matter in the plant; so that besides consuming food, plants resemble animals in digesting it.

There is a very beautiful way in which Nature provides for young plants when they first germinate. Most seeds contain a large quantity of starch. This is not soluble in water, but by the action of heat and moisture it becomes converted into sugar, which is soluble, and the young plant feeds upon this store of sugar, till its roots are able to draw food from the soil. Very often, just about the time that the store of food in the seed is used up, and the young plant has to begin to forage for itself, it looks yellow and sickly, and our old Cheshire farmers say very expressively that it is "being weaned and is pining for its mother." It is rather remarkable they should speak of it as they would of an animal; but it is more remarkable still that, in this case, rural Natural History is founded on a strictly scientific fact and not on superstition.

One of the most important of the natural actions performed by animals is that of respiration. Having heard that plants live, grow, eat, and digest like animals, you will not be much surprised to hear that they also breathe. It is true there is none of that regular contraction and expansion of lungs that accompanies the breathing of animals, but every plant that grows requires as constant a supply of the gases that it breathes as an animal does,

and it has an apparatus specially formed to enable it to obtain air; and if through the clogging up of its breathing apparatus it cannot obtain a due supply, it becomes literally suffocated like an animal.

The part of a plant which corresponds to an animal's lungs are its leaves. If you examine a leaf, you will first of all see that it is spread out very flat and thin;—that is in order that a very large amount of surface may be exposed to the air. You will find that the surface of the leaf is covered with a delicate skin, easily separated in some plants, not so easily in others. If you look at this skin through a microscope you will see that it is studded with immense numbers of small green openings. A more careful examination would show that these “stomata,” as they are called, are capable of opening and closing to admit the entrance and exit of air and various gases. It is through these openings that air is admitted into the substance of the leaves, where it acts upon the sap that I have already told you found its way to the leaves, and works those changes upon it that can only be compared to the changes that take place in the blood of animals when it comes in contact with air in the lungs.

The whole subject of the respiration of plants, and its relation to that of animals, is too long to enter upon now, and it is also unnecessary for the purpose of this paper; but it is a subject of peculiar interest, and brings before us some of the most wonderful facts in botany with which we are acquainted.

Powers of motion and locomotion are by no means confined to the animal kingdom. Indeed there are many animals that are as firmly fixed to the places where they grow as plants are, and cannot change their position at all, and whose only possible powers of motion are opening and shutting their mouths to receive the food that is washed past them, and almost forced upon them. Many plants are capable of as much motive power as this, and some of far more, and I will now give a few instances of movements in plants that are interesting.

There are several plants that move when touched, as the Sensitive Plant, and parts of the flower of some Orchises, and these

would seem to be endowed with feeling as well. What the nature of their feeling is, we cannot possibly say; but in its visible effects it exactly resembles an animal attribute. It is probably *not* sensation, like the feeling of an animal, but depends on some mechanical action.

But there are many other plants, or parts of plants, that move quite spontaneously. The stamens of all kinds of Saxifrages move. If you examine a newly-expanded flower, you will see that there are ten stamens lying back upon or between the petals of the flower, and that each stamen rises up in order and standing erect over the short pistil, sheds its pollen, and then, having delivered its fire as it were, falls back into the rear rank. You perhaps cannot see it moving any more than you can see the hour hand of a watch moving; but if you examine the flower at intervals, you will soon see that the stamens *have* moved. There is a plant called Love-in-a-Mist, or Devil-in-a-Bush, or Fennel Flower—its Latin name is *Nigella*—in which it is not the stamens that thus move, but the long pistils, each one bending down in order and touching a stamen, that it may be impregnated.

Then again the opening and closing of flowers is an instance of motion in plants. In the Crocus you may actually see the movement of the petals—the flower being so extremely sensitive to light. I have several times gathered a closed Crocus flower at night and brought it close to a bright light, and been much pleased to see the petals unfolding, and in a very short time fully expanded.

A very curious example of motion is seen in all climbing plants. The last two or three joints of the stem, indeed all that is above any attachment, is constantly revolving, in order that it may find and seize hold of whatever may be presented to it. Here, again, the motion may be too slow to be seen by the eye; but if a piece of glass be suspended horizontally over the top shoot of such a plant and the position of the tip of the shoot marked with a dot of ink at intervals of say an hour, the motion will become very apparent, and many plants are thus found to revolve several times during a day.

One of the most extraordinary instances of spontaneous movement in a plant is seen in the leaves of *Desmodium gyrans*, a leguminous plant. The leaves have three leaflets, and the two side leaflets are always gently moving up and down, quite irrespective of any currents of air.

And now I will just give you a veritable instance or two of locomotion in plants—the power of moving from place to place.

The first is seen in the beautiful Orchises that give our meadows such a charming appearance in the early summer. The bulbs of these plants differ somewhat from many bulbs, inasmuch as they die away every year, the flower spike feeding on the starch of the bulb; but while the Orchis is growing a new bulb is being formed, at *one side of the old one*, and thus the plant comes up each year perhaps half an inch from the place where it came up last year, and so, in the course of time, Orchises change their position considerably.

But this, I must own, is somewhat different from locomotion in animals, and is only similar in its effects. There are, however, certain parts of low plants that really do move about from place to place. Connected with the organs of fructification of many low water plants, there are exceedingly minute bodies, called “zoospores,” only visible with the microscope. These bodies have delicate hairs attached to them, which move freely about and propel the zoospore through the water for some time after it is detached from the parent plant.

Plants resemble animals in resting at stated periods. The closing of leaves and flowers at night is called the sleep of plants; but I should be inclined to look upon it rather as a means of protection to delicate organs, than as a time of rest for the plant. But *hybernation*, the quiescence of trees during winter—though depending, partly at any rate, on external circumstances—really acts like sleep to an animal, and enables the plant to start with fresh vigour, when the genial spring sunshine calls it to life, and sends the sap up again to the old branches.

There are very many curious facts with regard to the sleep of plants, the periodicity of their opening, and the curious ways they

are folded for protection ; and the subject is one that will be found very interesting to study and upon which to note down observations.

Then again, plants bear a very close resemblance to animals when the period of their life is ended. The causes of death are pretty much the same—wearing out of the different organs—some dying of disease ; others of sheer old age ; and when they have “ shuffled off this mortal coil ” they “ return again to their dust.” The earth receives them back again, and their remains help to make it richer for future generations.

I have told you now that plants, as well as animals, live, grow, eat, digest, breathe, move, sleep, and die. But besides these physiological attributes, as I may perhaps call them, it is strange to find at every turn that plants actually mimic animals in their habits of life.

We have unsociable animals that lead a solitary life, and others that are companionable, and live together in communities. So we meet with plants that grow singly, and others that are always found in patches ;—solitary and gregarious animals, solitary and gregarious plants. Of course this is only a superficial resemblance and caused in the plants by external circumstances. For instance, if the seeds of a plant are heavy, and when ripe simply fall around the foot of the parent plant, they will come up the next year in a patch where the old plant stood ; but if the seeds are light enough to be blown by the wind, they will be scattered here and there at a good distance from the parent, and will spring up, not in patches, but singly. Or if a plant makes offsets it will gradually form a patch, but a plant that never throws out offsets can never do so.

Then, again, there are animals that are parasitic upon others, and that cannot maintain a separate existence. And there are parasitic plants that grow upon others, and that could not grow at all if planted in the soil. These parasitic plants, though not a very large class, are exceedingly interesting. They become attached by means of sucker-like roots to other plants, and being quite detached from the soil—or rather, obtaining no nourishment from the soil—draw all their supplies from the sap of their foster

parents. Of course the injury they do is in some cases very serious, as they generally destroy the plants that have sustained them. The mystic Mistletoe (whose branches are in such demand for Christmas decorations, that we in the north, where the plant is very rare indeed, import train loads from Herefordshire and Worcestershire, where it is plentiful in every orchard) is the most familiar example of a parasitic plant. Probably all whom I am addressing will also know the Dodder—that causes such mischief amongst clover and fields of flax—and perhaps the Broom-rape also, a sickly-looking, leafless plant that preys upon the roots of clover.

A third class of plants that resemble animals in their habits are the scavengers. The greater part of the funguses act in this capacity, growing wherever decaying vegetable matter is present, and converting it into “humus” or soil, preventing unwholesome and unpleasant exhalations which would otherwise be given off from this decaying matter. They quite take the place in the vegetable kingdom of many animals, whose sole business in life is to clear away decaying and putrescent animal matter. I will now finish my illustrations with a few examples of plants that bear a very strange resemblance to certain animals. The animals I mean are those which we call carnivorous, because they live exclusively, or nearly so, on the flesh of others. And we actually find carnivorous plants—plants which, though they do not exclusively live on flesh, still seem to require a certain amount of animal food, and in order to obtain it, have very curious contrivances furnished them by Nature.

Of this strange carnivorous class is the Sundew, that grows on every peat bog; one of the prettiest of our wild plants, sending up a spike of delicate white flowers from a rosette of pink leaves, every one of which sparkles with tiny diamonds. The diamonds are the bait that it sets to catch unwary insects. They are little drops of a very sticky fluid that exudes from pink hairs upon the leaves, and that seems to be very attractive to flies, which alight on the leaves and are held prisoners in the gummy liquid and remain there till they die and decay.

A very curious fly-catching apparatus is seen in a plant called Venus's Fly-trap, a native of America, but seen now and then in our hothouses. Here the leaf is converted into something very like an iron rat-trap. It is bordered with sharp spines and in the centre are six hairs that secrete a sweet, tempting fluid. These hairs are sensitive, and the moment a fly alights upon them to sip the sugary bait, the leaf folds together suddenly, and remains closed until the fly is decayed.

In both these instances it is probable that the gases arising from the decaying flies are absorbed by the leaves, and help to nourish the plants; at any rate it is difficult to believe that such elaborate arrangements would be given to the plants for the evident purpose of catching insects, unless the insects were to benefit the plants in some way. Experiments might easily be made, and the results would be interesting and valuable, to whatever conclusions they might point.

This paper has grown during the writing to a somewhat greater length than I at first intended; but I have still not by any means exhausted the subject. In fact I have only thrown out a few hints and suggestions, which I hope may have been sufficiently interesting to induce further study; and I may be, perhaps, allowed to say, in conclusion, that there is still plenty of scope for discovery—that our knowledge of any branch of Natural History is not yet, nor ever will be, so perfect, that we can learn nothing more; but that every original observation is a step towards truth; that field naturalists, of all others, have the best opportunities of making observations; and that the veriest beginner, if he tries, may record something that shall interest, not only himself, but shall help the cause of science.

ROBERT HOLLAND.

LOCAL NAMES.—It is desired to collect as many as possible of the local names of British plants; and the assistance is requested of all who take an interest in the subject, or who may have the opportunity of ascertaining and recording them. Any lists sent to JAMES BRITTEN, High Wycombe, or to ROBERT HOLLAND, Mobberley, Knutsford, will be thankfully received and acknowledged.

Wycombe Butterflies.

IV.—THE SKIPPERS (*Hesperidæ*).

THE Skippers occupy a kind of debateable land between the butterflies and moths, considerable uncertainty having in years gone by existed about their proper place in a system of classification. Although this place is now settled beyond all doubt as among the butterflies, yet many a tyro mistakes them for moths; this is owing to their having very thick bodies in comparison with other of the *Rhopalocera* and to the large size of the head. The antennæ, however, present the distinguishing mark, *viz.*, clubbed tips; the only moths with which the beginner would be most likely to confound them being the Burnets, whose antennæ are likewise clubbed. But it will be noticed that the latter are clubbed immediately *before* the tips, whereas the Skippers have the *end* clubbed, with two exceptions, which will be noticed presently. The family derives its English name from the peculiarly short and jerky method of flying, which will have been noticed by all observant readers. They delight in the sunshine, and are to be found in almost every flowery spot, whether on the hillside, in the meadow, or the woods. As soon as the cheering May sunbeams enliven these places, we see little *Alveolus* and its dingy cousin *Tages* winging their flight over the early blossoms. There are seven species of *Hesperidæ* found in England; of these two are very local, the other five are all to be taken within a mile of the parish church.

THE CHEQUERED SKIPPER (*Thymele Alveolus*).—This is the smallest of the family, and, as before noticed, one of the earliest to appear. It is of a very dark ground colour, chequered over with small white spots. The wings are bordered with a black and white fringe. The most favoured locality I know for it is at the foot of the northern slope of Keep Hill. The caterpillar feeds on raspberry and kindred plants.

THE DINGY SKIPPER (*Thanaos Tages*).—A very sombre uninviting butterfly, found in company generally with the last-mentioned

species. It is of a smoky ground colour, shaded with darker marks. Its wings are always outspread when at rest, which is not usually the case with butterflies. The larva feeds on Bird's Foot Trefoil.

THE SMALL SKIPPER (*Pamphila Linea*).—Colour fulvous, shot with brown, with a thin dark border round the hind edges of the wings. The male has a short thin black streak across the middle of each front wing. It is not so common in this neighbourhood as some of the others, and is not very easily caught sight of, as it passes from one flower to another with a short tremulous flight.

THE LARGE SKIPPER (*Pamphila sylvanus*).—Considerably larger than the former, of a rich brown colour, shaded with fulvous blotches and spots. The male has the same distinguishing characters as that of *Linea*. The caterpillars of both species feed on grasses. I had the pleasure this summer of seeing the female deposit her eggs on some grass on the Warren, at Folkestone: she flew about from one stem to another, till she found one suited to her requirements; up and down this she appeared to glide without any motion of the wings, probably moving quickly with her feet. After she was gone I opened the closely-folded leaf round the stem and found inside about thirty small white eggs laid in a line. It is this species and the following which have hooked tips to the antennæ.

THE SILVER SPOTTED SKIPPER (*Pamphila Comma*).—This species presents on the upper surface considerable resemblance to the last mentioned, but the brown is much lighter in hue. The under surface is greenish, chequered with numerous square white spots, which show more or less distinctly through the upper surface. The male has the same mark as *Sylvanus*. Though tolerably plentiful where it does occur, *Comma* is decidedly local and is a butterfly for which a good exchange can generally be made. It is found in August all over the higher parts of Keep Hill.

The two species we do not find here are *Steropes Paniscus*, and *Pamphila Actæon*.

HY. ULLYETT.

On the Future Existence of the Lower Animals.

[The Editor is not prepared to endorse *every* sentiment contained in the following paper].

AS several members of the Society have evinced an interest in the above subject, I venture to offer a few remarks upon it to the readers of the Magazine.

It appears to be taken for granted by the majority of persons that animals are to have no existence in a future state. Let us consider whether the popular prejudice is supported by the few passages in Holy Writ which bear upon the subject. It will probably be denied by none that the lower animals do not at present enjoy the happy lives which they enjoyed in Eden before the fall of man, and which, but for that sad event, they would still enjoy. The question, therefore, is, Will they ever be restored to that state of happiness? When God "renews the face of the earth," and "the new heavens and the new earth" are formed, will the lower animals take part in its bliss?

Before we proceed to examine how this question is answered by Scripture, let us consider what was their state in Eden? or, in other words, how have they suffered as a consequence of the Fall? It is evident that they did not prey one upon another, as in that case perfect peace and contentment could not have reigned; neither were they preyed upon by man, as it is not till after the Deluge that we read (Gen. ix. 3), that God gave Noah and his family permission to eat flesh, "even as the green herb," which had before sufficed as food for all living creatures (see Gen. i. 30). No doubt they had also a higher mental *calibre* than now. They seem to have been intended to yield a ready and willing obedience to man, just as man himself was to yield a ready and willing obedience to God. We read that before the creation of Eve, when Adam was the only human being in existence, he gave names to all cattle (Gen. ii. 20). Of what use was that unless they were all to answer to their names? And the same sentence continues, "but for Adam there was not found an help

meet for him." I think we must infer from this that animals were of higher intelligence and much better able to converse with man than they are now; for the passage appears to imply that although Adam gave them all names, and made companions of them as much as possible, yet it became evident that he needed a still more equal companion, and therefore Eve was created. The fact that Eve was not startled when addressed by the serpent seems also to shew that animals were originally able to converse with mankind.

We will now proceed to consider the question—Shall the animals ever be restored to their original state of bliss, and be recompensed for the many sufferings and hardships which they now endure? S. Paul, in the 8th chapter of Romans tells us that "the creature was made subject to vanity, not willingly, but by reason of Him who hath subjected the same *in hope*." "The creature" cannot here refer to the human race, for in the following verses he goes on to say "The whole creation" (or "every creature") groaneth and travaileth together until now, and *not only they, but ourselves also*," whence it follows that "the creature itself," which, as he proceeds to say, "shall be delivered from the bondage of corruption," does not refer to the human race. Again, there is a remarkably clear reference to the subject in the 104th Psalm, where the Psalmist, after referring to various species of animals, says (in the 30th verse), "When Thou takest away their breath, they die, and are turned again to their dust;" and in the *following* verse, "When Thou lettest Thy breath to go forth they shall be made, and Thou shalt renew the face of the earth." Here the future renovation of the earth is spoken of in close connection with the resurrection of the lower animals.

In the description of the state of things during the millennium, given in Isaiah xi., we read of various sorts of animals dwelling together in peace and harmony. By many the passage is considered to have only a figurative meaning; but is it not safer to interpret no Scripture in a figurative sense which is capable of being understood in a literal one? Others, while admitting that the lions, oxen, bears, etc., refer to animals, do not deem it

necessary to believe that they will be individually such as have lived on earth before. This, however, seems to be the case from the expression in the sixth verse, "A little child shall lead them." There is no question that the little children will be those which have lived on earth before, or which shall be living at the time of the commencement of the millennium, and it seems only reasonable to suppose that the animals mentioned will also be the same.

The argument, however, which is most generally resorted to for the sake of proving that animals are to have no future existence is that in Psalm xlix. They are expressly called "the beasts that perish;" but if we carefully examine the whole Psalm, I think we shall find that it has no reference whatever to the subject. I may premise that it is the only passage in Scripture where it is contended that the word "perish" signifies to be annihilated. Wherever else it occurs it means to come by a violent death: as, "I shall one day *perish* by the hand of Saul;" "Lord, save me, I *perish*." Now, what beasts are they that usually *perish* or come to a violent end? Surely cattle that are slaughtered for human food; and these, I think, we shall find are meant by the "beasts that perish," mentioned in the Psalm. The object of the Psalm is to keep us from envying or being depressed at the prosperity of the wicked in this life; and if understood as I venture to propose, it is most admirably calculated to effect its purpose. The first eleven verses describe the pride and seeming security of wicked rich men; but in the twelfth verse we are told that notwithstanding this outward and apparent prosperity, the state of such persons, far from being an enviable one, is comparable to that of the "beasts that perish." In what way this comparison is fitting we read in the 14th verse, "They lie in the hell like *sheep*, death gnaweth upon them, and the righteous shall have dominion over them in the morning." It is only necessary to understand what is meant by "in the hell" in order to grasp the meaning of this verse. The "hell" is a stall partitioned off from a slaughter-house, in which are placed the live cattle waiting their turns to be slaughtered. Thus understood, how well adapted is the simile to keep us from being envious of the prosperity of the wicked.

Could we but bring ourselves to look, not on the external circumstances of such persons, but on their spiritual situation,—could we but “understand the *end* of these men,”—we should see that they are in as imminent danger of eternal death as cattle in the ‘hell’ of a slaughter-house are of a speedy temporal death.

It may be objected that by allowing a future life to animals, we bring them into too close a relation with ourselves. The same objection is sometimes urged against allowing them reason; although, if we set aside that ambiguous term, and substitute the plain word *understanding*, who can deny that they possess that? We might as well deny them sight or hearing. Reason cannot be the barrier which separates human beings from brutes. The real distinction seems to be that man alone is capable of knowing and loving God. That a man, by not acknowledging his Creator, rejects the sole characteristic of humanity, and degrades himself to the level of a beast, seems to be implied in Ecclesiastes iii. 18, 19, where it is said that men “might clear God, and see that they themselves are beasts.” That the immortality of man does not constitute the distinction is clearly stated in the 19th verse, where we read “all have one breath; as the one dieth, so dieth the other; so that a man hath [in that point] no pre-eminence over a beast.”

A belief in the future existence of animals enables us to dispel a plausible objection to the justice of God, viz., that He has subjected so many creatures that never have sinned to a life of misery, such as is the lot of many of our ill-treated domestic animals, especially beasts of burden. If they are to have ample compensation,—if they are to be, as S. Paul says, delivered (and annihilation is not deliverance) from the bondage of corruption,—this objection vanishes. It should also increase our confidence in God, to feel that He so cares for even the beasts. If the Lord will save, as the inspired writer says he will, “both man and beast,” surely the sons of men may put their trust under the shadow of His wings!

W. R. TATE.

Books Received.

The Birds of Berkshire and Buckinghamshire. By Alexander W. M. Clark Kennedy.

This work, written, as the preface informs us, by an Eton boy of sixteen, is one of considerable interest, not only because of the youth of the author, nor because it notes the occurrence of 225 different species of birds in the two counties, but on account of the pains taken by the author to collect and present every particular which is necessary to impart value to a work on Natural History. To our own readers this book will be more especially interesting, as the production of a member of our Society, and the first work of any magnitude with which the Society has been intimately connected. Of the real assistance afforded to the author by other members, a glance at a few pages will afford sufficient evidence.

The great essentials in a book on any branch of Natural History are exactness and accuracy; and these conditions are, we believe, strictly fulfilled. The names of those gentlemen who have contributed to the materials of the work alone afford a sure guarantee of the authenticity of the occurrences recorded; whilst the division of the subjects into the various headings of Residents, Summer and Winter Visitors, Spring and Autumn, and Rare and Accidental Visitors, makes it more readable and popular, and, in our opinion, adds to its practical value. We think, however, that it is scarcely necessary to chronicle the occurrence of individual specimens of such birds as the Red-legged Partridge, because this species is met with every year by most sportsmen throughout the two counties, and is not uncommon. There are also defects in style which may be remedied in a future edition, which, we trust, may soon be required. These, however, are minor matters.

Great credit is due to so young an author for the care and diligence he has exercised in the completion of his book, which is a real and material addition to the Natural History of the two counties. The paper and print are unexceptionable; and we think our Society may be proud of its connection with so creditable a work.

Science Gossip, Vol. for 1867. London: R. Hardwicke, 192, Piccadilly.

We have before had occasion to speak of *Science Gossip* as a model of what a magazine devoted to popular Natural History should be; and we gladly avail ourselves of this opportunity to endorse our opinion. The

volume before us evinces, by the number of its contributors, the general appreciation manifested of its contents; the correspondence pages are a complete "Notes and Queries" for naturalists; and the longer articles are of permanent value. It is difficult to select any one for especial commendation; but we may direct notice to one on "The Disguises of Insects," by A. R. Wallace, the interest of which is enhanced by the beautiful woodcuts with which it is illustrated. Among the contributors to the present volume may be named Professor Huxley, Mr. J. K. Lord, Mr. Charles Darwin, and the editor, Mr. M. C. Cooke; while our members will read with especial interest the articles by Messrs. Robert Holland, Henry Ulyett, R. B. Sharpe, and others, to whose kind assistance our own pages are indebted for many contributions. We have also received the numbers issued during the present year, but a more detailed notice of these is reserved.

The Naturalists' Circular. London: Henry Hall, 56, Old Bailey.

This little magazine seems to meet with deserved favour among naturalists. The numbers before us contain short articles of practical interest, with occasional illustrations. The paper on "Waterlilies," by Mr. Holland, which was read at our last Annual Conversazione will be found in the numbers for August and September.

The Naturalists' Note-book. London: Reeves and Turner, 196, Strand.

The plan on which this little work is conducted differs somewhat from those above noticed. Its contents consist chiefly of articles selected from various magazines and current works on Natural History; original papers are also included. Considerable space is devoted to Correspondence; and we cannot but think that the selection under this head might be more judiciously made. Such communications as the one headed "Beautiful Butterfly," in the August number, scarcely merit the space they occupy. Perhaps this objection might be removed by devoting a single column to editorial "Answers to Correspondents," in which case one line would have taken the place of the somewhat lengthy query above referred to, and its answer in the present number. The general get-up is, however, excellent; the type especially being remarkably clear and good.

Our member, Mr. R. B. Sharpe, has forwarded a prospectus of his forthcoming work, "A Monograph of the *Alcedinidæ*, or Kingfishers." It will be published in quarterly parts, imperial 8vo., and each part, price 10s. 6d., will contain eight coloured lithographs. Any information relative to the habits of any species of Kingfisher will be gladly received by Mr. Sharpe, at 11, Hanover Square, London, W.

Correspondence.

OTTER AT COOKHAM.—On Monday, the 10th of August, a female Otter, three feet in length, and weighing 15½ lbs., was shot on an islet in the Thames, near White Place, by Mr. Joseph Ford, Jun.; his dogs at the same time destroyed her four young ones.—*South Bucks Free Press*. A specimen of the Cross-bill (*Loxia curvirostra*) has lately been shot in the same neighbourhood.

THE CLOUDED YELLOW.—A specimen of this was taken last month at Addington, near Winslow, by Mr. John Mathison. He writes:—"I captured a specimen of the Clouded Yellow Butterfly (*Colias Edusa*), a few days ago; it is a male. Some years ago I captured a female of this species; these are the only specimens I have ever seen in this part of the country."

THE GULL.—A young specimen of the Common Gull (*Larus canus*) was captured between Booker and West Wycombe, during last July. It survived only two days.

FLORA OF BUCKS.—A second "List of Buckinghamshire Plants," including the additions which have been made to the known Flora of the County during the past year, will, it is hoped, shortly be published. It is therefore requested that any one who has any information on the subject in his possession will forward the same to JAMES BRITTEN, High Wycombe, at his earliest convenience.

THE FOLKESTONE NATURAL HISTORY SOCIETY announces the publication, at an early date, of the first number of a Quarterly Magazine of Natural History. When we state

that it will be edited by our former Secretary, Mr. Ulyett, we are sure that our readers will cordially wish it success.

ABNORMAL DEVELOPMENT OF TEETH IN A RAT.—A short time ago I saw in the window of a taxidermist in Birmingham, a rat which had been stuffed and labelled—"This curious specimen was caught at Harborne, March, 1865." It was indeed a curious specimen; for the greater part of the lower jaw had been destroyed, probably by a spring trap. The two upper incisors had grown enormously long, and described a curve; the one on the left side formed a ring of bone, and the one on the right side had curved and pierced the palate, projecting partly through the nose half-an-inch above the tip. The poor animal must have suffered much pain and inconvenience from the abnormal growth, but was in good condition. Some time ago I had the pleasure of showing at our Natural History Conversazione a similar occurrence in a rabbit, which had been presented to our Secretary. I had not an opportunity of seeing the lower jaw, but I have no doubt it was destroyed in a similar manner.

R. M. BOWSTEAD, M.D.

THE GREAT BUSTARD (*Otis tarda*).—Mr. Clark Kennedy gives 1802 as the last date at which a specimen of this bird was seen in Berks or Bucks. Mr. W. H. Rowland, of Hungerford, wrote as follows in the *Times* of January 31, 1856.—"A specimen of the Great Bustard (*Otis tarda*, L.), a male, and a very fine one, was taken January 3, 1856, in the neighbourhood of Hungerford, just on the borders of Wilts and Berks."

The Birds of Cookham and the Neighbourhood.

Continued from page 30, Vol. II.

Fam. SYLVICOLIDÆ. *Sub-fam.* MOTACILLINÆ.

b. *Calobates.*

40. *Motacilla sulphurea.* The Grey Wagtail.

Although generically separated by recent authors under the name *Calobates*, I cannot find any real difference of structure between this form and true *Motacilla*, and I can only suppose the genus to have been founded on a difference in the style of plumage. This sort of genus is greatly in vogue now-a-days, especially among the German and American systematists, and, although I allow that there are many very distinct genera un-recognised by such well-known ornithologists as Yarrell, Morris, &c., I cannot but admit that such multiplications of genera as the extensive systematists allow, are unessential to the advancement of science, and tend greatly to perplex the student.

Such are the considerations that induce me to dissent from the recognition of *Calobates* by Mr. Gould, in the lately published part of the 'Birds of Great Britain.' I perceive only a slight difference in the beaks of *Motacilla Yarrelli* and *M. sulphurea*. That of the latter is a little thinner and more elongated, but as the relations of the primaries to each other in both species are the same, and the habits of each bird so similar, I cannot allow the more slender beak and legs of *M. sulphurea* to be more than a specific character.

The Grey Wagtail is rarely observed in its summer dress in this country, though I believe it breeds in the north of England. At all events, I saw eggs said to be of this species in more than one collection near Peterborough. Mr. Harting says in his 'Birds of Middlesex' (p. 64):—"Although I have found the Grey Wagtail breeding in Northumberland in May, yet in the south it appears to be only a winter visitant." I subjoin a very interesting note by Mr. Gould, and as it relates to the breeding

of the present bird in Buckinghamshire, it will doubtless interest many of my readers.*

The present species makes its appearance at Cookham about the middle of September, and is by no means rare during some winters. The first Mr. Briggs noticed this year (1868) was on the 10th of September, but it is not until the end of the month that any number of them are to be seen. The Grey Wagtail is one of my favourite birds, and I always take great delight in observing it in its native state. I have often watched two or three together running swiftly along the sheeting of Miss Fleming's weir at Cookham, catching flies and picking up little insects from the green weed accumulated on the piles. Their motions are full of grace, and it is impossible to imagine a more elegant and modest little bird. The bright yellow on the lower parts of the back and abdomen is gently relieved by the soft grey of the back, while the two exterior tail-feathers, which are pure white, are always very conspicuous, as the bird undulates its tail upwards and downwards. The note of the Grey Wagtail is always more sweet and striking than that of its congeners, and when flying, the "dips" through the air are more marked than in the flight of the Pied Wagtail. Its form is also more slender, and its head, when seen in a recently killed bird or a skin, appears very small and out of proportion.

I have now lying before me specimens of the present species in summer and winter dress, those in the former state of plumage

* "During a trout excursion in June last," writes Mr. Gould, "to Cheneys, in Buckinghamshire, Mr. John Dodd called my attention to a species of Wagtail which had built its nest in a rose bush trained against a wall in his garden. Judge my surprise when I there found a beautiful black-throated *M. bairdii* † sitting on four eggs, and so fearless of observation as almost to admit of my touching her. Mr. Dodd permitted me to take the eggs for my son's collection; and a Greenfinch having a nest close by, four of its eggs were transferred to that of the Wagtail; they were hatched in due time, and the young partially reared by their foster-parents. The circumstance above detailed induced me to seek for others, and I met with a second pair the next day at Elliot's Mill, about two miles and a half higher up the stream. I further ascertained, that this species was not uncommon as a summer resident, and that the Yellow Wagtail, *Budytes flava*, ‡ so universally dispersed over the country, was seldom or ever seen there."

* Vide Jard. Contr. to Orn., 1849, p. 135.

† *M. sulphurea* of this paper.

‡ *Budytes campestris* of this paper.

being from Switzerland. In the summer plumage the throat is black and the rest of the under-surface of the body bright yellow. I have only once observed the Grey Wagtail near London, when I saw one flying along the Regent's Canal, close to the Gloucester Gate of the Regent's Park, on the 3rd of November, 1868. In the neighbourhood of Hampstead and Highgate it is sometimes seen in the autumn, and Davy, the well-known dealer in the Kentish Town Road, has some occasionally for sale at this time of year. They do not, however, appear to thrive well in confinement.

Budytes.

41. *Budytes campestris*. Ray's Wagtail.

This pretty little Wagtail is not so often met with by the water-side as the two last-named species, hence it is classed among the *Field-Wagtails*, in opposition to the other members of the family which are known as *Water-Wagtails*. The shorter tail and other slight modifications of structure, as well as the difference of habits, apparently justify its separation under the distinct genus *Budytes*. Another species of this genus, the Grey-headed Wagtail (*Budytes flava*) is also occasionally met with in England. Of this latter species I saw a specimen, caught near Hampstead this summer, in Davy's shop.

Ray's Wagtail is very often observed on Cockmarsh Common, about the middle of May, whence I have seen several specimens obtained by the villagers. I think this species is some time in gaining the fully adult plumage, that is to say, in donning the beautiful yellow breast, which gains for it the provincial name of 'Yellow Dishwasher.' In an account of a "Berkshire Ramble" recorded in the *Naturalist* for August, 1866, I mentioned the fact of my shooting two specimens on the 27th of May of that year. I well remember that this pair, which at that time of year would be in full breeding plumage, had the back greenish-brown and the underparts very pale yellow, their colours being wonderfully dull, when compared with a fully adult bird in my collection. I have several specimens of Ray's Wagtail from the Gambia, but none of them are in the adult plumage.

I should mention that a beautiful male bird of this species is in the collection of Mrs. De Vitre at Formosa.

Anthus.

42. *Anthus pratensis.* The Meadow Pipit.

This bird is very common in the autumn and winter, and one may be always sure of finding a flock of them, along with the Wagtails and Starlings in the sheep-folds. When disturbed they fly up with a sharp note, from which their trivial name has most likely been derived. The amount of variety to be met with in a series of eggs of this species is remarkable, but I have not seen many varieties of the birds themselves. At a meeting of the Zoological Society, on November 12th, 1868, a dwarf specimen of the Meadow Pipit was exhibited by Mr. Geo. Dawson Rowley, of Brighton, which was exactly similar in colouring to the ordinary bird, but was very much smaller. I have in my own collection a very dark-coloured specimen of this species from Holland.

43. *Anthus arboreus.* The Tree Pipit.

This species may be distinguished at once from the Meadow Pipit by the short hind claw, a modification showing that its habits are more arboreal than terrestrial. I have, however, shot it on one occasion when running along a sand-bank. In Johns' 'British Birds in their Haunts,' there is an admirable drawing by Wolf, of the Tree Pipit, showing the way in which the bird throws itself into the air from the summit of a tree or bush, pouring forth its song all the while. A male specimen in my collection was obtained by Mr. Briggs while in the act of flying thus.

Fam. SYLVIADÆ.

Sub-fam. ACCENTORINÆ.

Accentor.

44. *Accentor modularis.* Hedge Accentor.

This little bird is the well-known Hedge-Sparrow, which name, should, however, I think, be dropped, as it is not in any way allied to the Sparrows. It is common at Cookham.

Sub-fam. SYLVIINÆ.

Phyllopneuste.

45. *Phyllopneuste sibilatrix*. The Wood Warbler.

The usual name for this bird is the Wood Wren, but as in the case of the Hedge-Sparrow, the bird has nothing to do with the Wrens, but belongs to a well-known group of Warblers separated by modern systematists under the genus *Phyllopneuste*.

The Wood Warbler is by no means common at Cookham, and I have only seen three specimens which have been shot there. One of these is in Mrs. De Vitre's collection at Formosa, another, a very old and beautiful male, was formerly in my own, but is now in the possession of Mr. P. M. Mc'Kie, of London, who has a very good series of Cookham birds. The third, a plain-coloured male, was shot by Mr. Briggs on the 4th of June, 1865, and is now in my collection. I happened to be present when this specimen was procured, and we were attracted to it by its note, which was at once recognised by Mr. Briggs as that of the Willow Warbler. The little bird was soon seen at the very tip-top of a tall elm tree, busily engaged in picking insects from under the leaves. Its manners were very sprightly, and it flew from twig to twig with great rapidity.

46. *Phyllopneuste trochilus*. The Willow Warbler.

This species is common at Cookham in the summer, when it frequents the willows. It is curious that the young birds are brighter in colour than the adults. I have a young bird, caught in a greenhouse in May, 1865, that had the under parts such a bright yellow, that, being in ignorance of the above fact, I really thought I had got another species of British Warbler of which to record the occurrence.

47. *Phyllopneuste rufa*. The Chiffchaff.

This pretty little Warbler is more often heard than seen, but can be easily recognised by its note, of which its common name is a very tolerable representation. It may be distinguished from the Willow Wren by its dark-brown legs.

Regulus.

48. *Regulus cristatus*. Golden-crested Kinglet.

The term "Kinglet" is applicable to these little gems, which seem truly to wear a golden crown. The Gold-crest is found sparingly at Cookham, frequenting the fir-trees at Formosa,

where it builds its nest nearly every year. Of the allied species the Fire-crested Kinglet (*Regulus ignicapillus*), I saw lately a very beautiful pair, which were shot on the 10th of October, at Shooter's Hill, Kent, and are now in the collection of Mr. Henry Whitely, of Woolwich.

Sylvia.

49. *Sylvia cinerea*. The Greater Whitethroat.

This bird is common at Cookham in summer, and is always found in kitchen-gardens, where it is very destructive to the green peas. Its song is harsh, and when delivering it the bird often throws itself into the air, after the manner of the Tree-Pipit; at other times it is heard singing from the depths of a thick bush. The local name of both the Whitethroats near Loughborough, and also near Peterborough, is 'Hay-chat,' a name which can only have originated, in my opinion, from the note of the bird, which often utters such a note, when suddenly disturbed, or when its nest is attacked. I often used to find the nest, in the above-mentioned localities, situate in a bed of nettles, so that any one can guess the slightness of the structure, which is supported on such slender stems. The nest was always constructed of dry bents and stalks of grass, and was not very artistically arranged. The Whitethroat's nest is certainly one of the slightest built of all the British birds, and one can generally see through the bottom; indeed it used to be a common saying when I was at school that the nest was ready for eggs when you could see plainly through it. I have lately received a Whitethroat from Holland, which is larger than any British specimen in my collection. As a rule, birds from this country are smaller than British specimens.

50. *Sylvia curruca*. The Lesser Whitethroat.

The Lesser Whitethroat is not so commonly met with anywhere as the foregoing species, and I have seldom seen it near Cookham. I have never taken the nest myself in the neighbourhood, though I have seen some eggs which were obtained there. At Loughborough this bird was by no means uncommon, and resembled the larger species in the construction of the nest, and in the situations for placing it; I have even found nests of both species in the same bed of nettles.

Hard Words.

WHEN people wish to be sarcastic on the subject of Natural History, they usually fall foul of what they consider the unmeaning Latin names by which plants or insects are known to the scientific world. They speak with scorn of those

“Whe *Allium* call their onions and their leeks,”

and ask to be told whether a Peacock Butterfly is any the better for being designated by the high-sounding title of *Vanessa Io*. They will not stop and let you show them that the names—to them unmeaning—are, in many cases, highly significant and appropriate; they ignore the advantage of having an object named in a language which is universally known, and by which a naturalist in one quarter of the world would recognise a plant or an animal found in another, and fall back on the remark that they shall call a Buttercup a Buttercup to the end of their days. Now, it must not be supposed that we have any sympathy with those who pedantically use scientific terms for the purpose of showing off their own knowledge—which is probably very superficial—and of astonishing their listeners. No one but a snob—for there are snobs even among professed naturalists, although Mr. Thackray omitted them from his book on the genus—would speak of natural objects by their scientific names to any but those who were at least as fully able as himself to comprehend them; but we are anxious to show that these “hard words,” after all, have a meaning, and to explain this meaning by aid of a few examples is the object of this paper. It will contain nothing new: and those of our readers who already understand the Latin names of plants may pass it over.

Far be it from us to underrate the value, the beauty, or the interest, of our English names. What can be prettier, more appropriate, or more poetical, than the name Daisy, or Daye’s eye?—that favourite of Chaucer, who says,

“That above all flowris in the mede
Then love I most these flowris white and rede,
Such that men callin daisies in our towne.”

And again,

"That well by reason men callé it maie
The daisie, or els the eie of the daie."

By every principle of good taste and common sense, we are bound to speak of plants or animals by their English names to the many who, without actually studying them, feel an interest in noticing and hearing of the beautiful things around them—an interest which we should encourage by every means in our power, and carefully refrain from checking by any ill-judged display of our own scientific knowledge.

Some persons—we hope but few—are deterred from the study of Natural History by the "hard words" employed. They seem to think it incumbent on them to commence studying botany, for example, by learning scientific names, and shrink from attempting so formidable a task. No mistake could be greater. Those who have not tried it will scarcely believe in how short a space of time one's eye becomes familiarised with the dreaded words. As a further assistance to this end, it is useful to have at one's elbow some books containing both English and Latin names of plants; and then, if we come across a Latin word which conveys no English equivalent to our mind, it is easy to look it out; the chances are that we shall not again forget it.

Before the time of Linnaeus, the Latin names of plants were indeed weighty matters; many of them, from their length and copiousness being rather a description of a species than its mere designation. Grateful should we be to that great botanist for having so simplified the matter that the name of a plant can now be expressed in two words: the first word being called the *generic*, the second the *specific*, name. The first is usually common to several plants, closely connected with each other by certain features; the second is applied to but one species of the same genus. Thus—to use a homely illustration—when we say "John Brown"—"Brown" is, so to speak, the genus, of which John and his brothers, William and Thomas, are species. The Latin generic title often denotes some characteristic which is common to all the species comprised under it; or it is derived from the name of some person who is considered by the namer to be worthy

of such commemoration. The specific name often refers to some peculiarity in structure of the plant to which it is applied, to its place of growth, or to its likeness to other species, or like the genus is named after its discoverer, or some eminent botanist. Let us now look among our wild flowers for some illustrations of the appropriateness of their Latin names.

First, we may observe that a great many genera are named from a resemblance in their blossoms to some other object. The large, chalice-shaped flowers of the Marsh Marigold suggested the name *Caltha*, from a Greek word signifying a *cup*; and the name *Stellaria* applied to the Stitchworts, was clearly given them on account of their white *star-like* blossoms. The Foxglove earned its more learned title, *Digitalis*, from the resemblance in shape of its handsome flowers to the *finger* of a glove; while the *bells* of the Hairbell and its allies obtained for the genus its name, *Campanula*; the Globe-flower is called *Trollius*, from the German *trolen*, a ball, in reference to the round outline of its blossoms. Sometimes other parts of the plant are selected; the arrow-shaped leaves of the Arrow-head gained for it its English name, as well as the Latin *Sagittaria*; the Shepherd's Purse (a translation of its English name, *Bursa-pastoris*,) owes both these and its generic title, *Capsella*, to its curious seed pouches. The Horse-shoe Vetch is *Hippocrepis*, from the resemblance which the pods present to a *horse-shoe*; the Birdsfoot, *Ornithopus*, from a similar likeness; the Coralwort is *Dentaria*, from its *toothed* root. Other genera were named from diseases for which the species comprised under them were supposed to be remedial; *Scrophularia* is one of these. Of the very many which commemorate distinguished botanists we need only mention *Linnaea*, *Villarsia*, *Wahlenbergia*, *Lobelia*, *Knappia*, *Isnardia*, *Hutchinsia*, *Teesdalia*; other names, of more ancient, or classical, allusion are, *Daphne*, *Iris*, *Narcissus*, *Euphorbia*, *Gentiana*, *Centaurea*, &c.

To turn now to specific names, we shall find many which are common to several plants in different genera, and indicate their place of growth. Thus, *palustre* denotes a *marsh-loving* species—e.g., Marsh Willow-herb, *Epilobium palustre*, Marsh Bedstraw,

Galium palustre; *sylvaticus*, a woodland plant—e.g., the Wood Rush (*Scirpus sylvaticus*), the Wood Scorpion-Grass (*Myosotis sylvatica*), the Wood Cudweed (*Gnaphalium sylvaticum*); *arvensis* or *agrestis* a plant of fields, as the Field Scabious (*Knautia arvensis*), and the Field Foxtail grass (*Alopecurus agrestis*); two species of Speedwell, growing in similar situations are named respectively *Veronica agrestis* and *V. arvensis*. *Pratensis* denotes a meadow flower; as the Lady's Smock (*Cardamine pratensis*), the Purple Clover (*Trifolium pratense*), and the Meadow Cranesbill (*Geranium pratense*); *aquaticus* and *aquatilis* refer to plants growing in or by water, as the Water Crowfoot (*Ranunculus aquatilis*) and Awlwort (*Subularia aquatica*). *Sativus* points to a cultivated plant or its origin; the Garden Radish is *Raphanus sativus*, the Parsnep, *Pastinaca sativa*, and the Wheat, *Triticum sativum*. *Officinalis* denotes former use, in medicine or otherwise, as the Borage (*Borago officinalis*), common Speedwell (*Veronica officinalis*), &c. *Vulgaris* is applied to very common plants, as the Groundsel (*Senecio vulgaris*), Ling (*Calluna vulgaris*), and many more.

Another class of specific names is that which takes its origin in a reference to different parts of the plant. *Bulbosus* shows a plant with bulbous root, as in the Buttercup (*Ranunculus bulbosus*); *repens* denotes creeping roots or stems, as in the Couch-grass (*Triticum repens*). Most names of this class are taken from the leaves; thus we have *Geranium rotundifolium*, the Round-leaved Cranesbill; *Vicia angustifolia*, the Narrowleaved Vetch; *Veronica hederifolia*, the Ivy-leaved Speedwell; *Plantago lanceolata* the Ribwort Plantain, with long tapering, or lanceolate, leaves; *Tilia parvifolia*, the small-leaved Lime; *T. grandifolia*, the large-leaved Lime; *Orchis maculata*, an Orchis with spotted foliage; *Lamium incisum*, the Cut-leaved Dead Nettle; *Chlora perfoliata*, the Yellow-wort, which has *perfoliate* leaves; and so on. Others refer to the colour of the flowers; as *Anagallis cærulea*, the Blue Pimpernel; *Helleborus viridis*, the green Hellebore; *Centranthus ruber*, the Red Valerian; *Gagea lutea*, the Yellow Star of Bethlehem; *Lamium album*, the White Dead Nettle: others to the size of the flowers, as *Cephalanthera grandiflora*, Large-flowered Helleborine;

Ranunculus parviflorus, *Small-flowered Crowfoot*. The general character of the plant is referred to in such names as *Ranunculus hirsutus*, the *Hairy Crowfoot*; *Geranium molle*, the *Dove's-foot Cranesbill*, remarkable for its *softness*. Some specific names show the likeness of the species which bear them to other plants; thus, *Villarsia nymphæoides*, means the *Nymphæa*-(or *Water Lily*) like *Villarsia*; *Helmintha echioides*, the *Echium* (or *Bugloss*) like *Ox tongue*; from the resemblance of its prickly leaves to those of *Echium vulgare*.

Yet another class refers to certain peculiarities in the species themselves. Thus, our *Coralwort*, which is so curiously propagated by means of little buds, or bulbs, which grow in the axils of leaves, is aptly called *Dentaria bulbifera*, the *Bulb-bearing Coralwort*. The *Bee-orchis* is *Ophrys apifera*, the *Fly*, *O. muscifera*, in each case the name being taken from the likeness of the flowers to the insects referred to.

Thus, then, we have endeavoured to show that some, at least, the "hard words" of botany have a meaning. In some cases, the names are misapplied—*Pedicularis sylvatica* for example, is by no means a woodland plant—but these are exceptions to the rule. Perhaps this short paper may induce one or two, at least, of our readers to investigate the matter further; in which case its object will have been attained.

Additions to the Wycombe Flora, 1868.

ANOTHER year has passed in the annals of our Society: and it again falls to our lot to consider what we have done during that period—how far we have increased our knowledge of the Natural History of our district, a knowledge which it is our privilege, as well as our duty, to endeavour yearly to render more complete. As I have twice had the pleasure of laying before the readers of the magazine a brief statement of the progress we have made in the investigation of the Flora of our neighbourhood in former years, I will now enumerate the additions made to it during the past season.

Those who read a paper on "Our Violets," published in vol. i, pp. 90-94, may remember that I was then particularly anxious to discover in our district that form of the Wood Violet (*Viola sylvatica*), known to botanists as *V. Reichenbachiana*. I am very glad to say that I have at length detected it growing in abundance in Adder's Lane, as well as more sparingly in other places, mingled with the commoner, *V. Riviniana*; the Miss Drummonds have forwarded me specimens of both forms from the neighbourhood of Denham. The differences between the two, as stated in the paper referred to, were perhaps scarcely as definite as might have been wished; the best description of them is that given by Mr. Watson in the 'Flora of Surrey.' "It is," he says, "readily distinguished by its narrower petals of pale purple, with a deeper spot at their base, and more flattened, always purple, spur." These particulars exactly characterise the form. While speaking of the Violets I must not omit to refer to two very beautiful varieties of *V. Riviniana* which were found by Mr. Marshall, in a little wood on Flackwell Heath: one of these had very large pure white flowers, on which the branched purple veins stood out with great effect; the other had pale pink blossoms.

Flora seems to have paid our President a graceful compliment by producing a species new to Wycombe, almost at his door: in other words, the Whitlow Pepperwort (*Lepidium Draba*), appeared in great force on the small piece of waste ground immediately opposite his house. This is one of those plants which are gradually making themselves at home in England; how to account for their introduction is difficult, and yet their places of growth render it evident that they have been introduced in some way or other. In the present instance we have a plant which is neither useful nor particularly ornamental, certainly not sufficiently so to render it worthy a place in our gardens. It will, however, be interesting to note whether this *Lepidium* will hold its ground; in all probability it will do so, if the ground remain undisturbed.

Another novelty of doubtful origin is the Hautboy Strawberry (*Fragaria elatior*), which I found last May well established in a lane below Handy Cross, near High Heavens Wood; too near a cottage, however, to be really wild.

The Marsh Cinquefoil (*Comarum palustre*), like the three preceding species, is new, not only to our district but to the county. Mr. Latimer Clark included it in a list of plants which he had observed growing near Marlow; but I have been unable to ascertain further particulars respecting it. While in Cheshire I was much struck with the abundance of this plant as affording an illustration of a species rare in our county, but there one of the commonest; it grows by, and in, every pond or pit in the neighbourhood of Mobberley.

The Butcher's Broom (*Ruscus aculeatus*) was discovered by Mr. Marshall, near Cores End, and by him recorded in vol. i, p. 190. It is new to the district, but not to the county.

We may now turn our attention to a few of the rarer plants which have been observed in fresh localities during the past year. First in importance comes the Mezereon (*Daphne Mezereum*), which has this year been observed in two new places—in the Bradenham Woods, by Dr. Bowstead, who recorded the discovery in vol. i, p. 194, and at Hazelmoor, by Mr. Marshall. Mr. Latimer Clark has furnished me with the following note relative to its former occurrence in our district:—"Daphne Mezereum grew thirty years since sparingly in the woods about a mile and a half from Penn. At that time we could find only four or five plants, and those large and old ones, as the cottagers removed the small ones for the purpose of planting them in their gardens. It also grew at the same period, very sparingly in the woods between Marlow and Loudwater. I have also once seen it on the Berkshire side of the river. From its attractive appearance, and the love of gardening which has now become so general, I have no doubt it has been eradicated by the cottagers." I have elsewhere* entered more fully into the question of the nativity of this rare plant, and therefore need only remark that the more I investigate the subject, the more convinced I am that in Buckinghamshire at least, it has every claim to be ranked as a genuine British species. Next in importance we may rank the Deptford Pink (*Dianthus Armeria*), found by Mr. Marshall in a small wood

* *Naturalists Circular*, March, 1868, pp. 86—88, and April, pp. 103—4.

on Winter Hill, Berks, just within the district. This is the more interesting on account of the disappearance of the plant from its former locality near Little Marlow, the only place in Buckinghamshire, from which it had been recorded; it has, however, I am informed, been found this year on Green Street by Mrs. B. Lucas. That careful observer, Mr. Daniel Avery, has found the Scaly Spleenwort (*Ceterach officinarum*), in some abundance on a wall at Moor Farm, near Lane End. In Culpeper's 'Herbal' it is said to grow "on Beckonsfield Church in *Berkshire*." The Columbine (*Aquilegia vulgaris*), and Deadly Nightshade (*Atropa Belladonna*), have been noticed in a wood near Moor Farm by Mr. Avery; of the latter plant I found the following note in Curtis' *Flora Londinensis*—"We remember to have seen it growing in great abundance on Keep Hill, near High Wycomb, Buckinghamshire. Close by the spot where we observed it, there chanced to be a little boy. I asked him if he knew the plant. He answered 'Yes, it was naughty man's cherries.' I then enquired of him if he had ever eaten of the berries? He said he had, with several other children from an adjoining poor-house, and that it made them all very sick, but that none of them had died." I learn that the plants on Keep Hill were subsequently destroyed lest other children should "eat of the berries;" but, as many of our readers know, it still grows in the Park adjoining the Hill.

ADDITIONS TO THE FLORA OF BUCKINGHAMSHIRE.

As a supplement to the foregoing, I may enumerate the more important additions which have been made this year to the Flora, not of our district, but of the county. Four of them have been already enumerated under the former head, and the following may also be cited:—

Rhamnus Frangula. The Miss Drummonds, of the Tile House, Denham, have very kindly sent me specimens of this from Juniper Wood, in their neighbourhood.

Impatiens fulva. "Very abundant in ditches near the Colne, Denham." *The Miss Drummonds*.

Oxalis stricta. "Gardens and waste places, the Tile-house, where it appears accidentally every year." *The Miss Drummonds*.

Triglochin palustre. "Denham Moor." *The Miss Drummonds*.

Alisma ranunculoides. "Hyde Heath, Chesham." *Miss Dora Stratton*.

Botrychium Lunaria (Moonwort). "One plant was found some years since at Leckhampstead, near Buckingham." *The Miss Drummonds*. The occurrence of this solitary specimen, on which the Moonwort bases its claims to be ranked as a native of our county affords a curious parallel to that of two plants of the Limestone Polypody (*Polypodium Robertianum*), which Mr. Ulyett found a few years since in King's Wood; it has never been observed since, either there or in any other part of the county.

Lycopodium Selago. "East Burnham Common, June, 1864." *Mr. R. G. Keeley*.

JAMES BRITTEN.

A Chat about thekestrel.

Falco tinnunculus.

IT is all very well keeping rabbits, guinea-pigs, and canaries, but then you see everybody almost does so; these creatures come into the category of tame animals, and though I am by no means going to deny that there may be much that is interesting in their habits, I used to feel that as a naturalist (a very young one) I should like to study something rather out of the common; I should like to keep some creature that few other people would think of keeping. And as the above-mentioned animals were to be seen in dozens of my friends' houses, I looked upon them in the same light as I did on dogs, fowls, ducks, &c. It was not everybody that petted a snake or a toad; mole-cricket and grasshoppers were not ordinarily kept in captivity;

that was the reason I took to them. Now although it was not exactly the correct thing for me to ignore our commoner household pets, yet when I look back now I rather think the feeling sprang from a proper motive. I really fancied that the commoner any creature was, the more interesting its study became—and I think so still—more interesting because it is too common for people to notice it much. And so it really possesses the great charm of *freshness*, that ever present delight in Nature; and I feel the greatest pleasure in catching any ordinary animal out in the fields—a mouse, a cricket, a bat, or a beetle, and in placing it in durance vile for a week or two while I am rude enough to make observations upon it. What wonders and mysteries there are close around us if we did but know it! What an abundance of amusement and instruction can be obtained if we do but use our senses.

But I am wandering strangely; I meant to write about the Kestrel, so I had better begin. If you ever want to study a bird, give it plenty of room. Do you think anybody could write the natural history of a Goldfinch from watching one in its cage about nine inches square? Is it at all likely that you get any clear ideas of the life of a Lark from seeing a wretched captive beat its head against the roof of a low cage in vain longings for the blue sky? I don't think I could possibly keep a caged Lark. With Finches you may learn much, if you have a nice roomy aviary, and so you may in fact with most other birds. A Hawk of course wants a very large cage, but it is still better to give him the run of a garden. The Kestrel is more commonly seen in captivity than any other Hawk, and is really a most interesting creature. When brought up by hand from the nest it is very tame, and loses much of its natural fierceness; one that I kept would always come and caress my finger when I put it into the cage. But when caught and confined it is a long time before it is at all tractable, though by proper management and very patient and careful training it may even then be taught to go 'hawking.' I never went in, however, for this branch of study. And of course if not treated kindly it remains savage and violent;

one was once brought to me that had been reared by hand, but had been much teased by those natural enemies of the lower animals—children, and this was so fierce that it would fly at anyone who approached its cage.

The Kestrel is very plentiful all over this part of the country, and is really a very handsome bird. It is also known as the Windhover, from its habit of remaining poised in the air over one particular spot for some length of time. Then is the time to take out your telescope and watch it, its head close to the wind, its sharp eyes directed below, able to detect the smallest movements even of the almost invisible field-mouse. The wings are shivering all the time, the tail-feathers altering their position now and then as necessary, while perhaps a swift but gentle sweep takes place occasionally as the prey shifts its ground or is lost. I often here at Folkestone lie on the top of the cliffs and watch the Kestrel down below on the Warren. I remember too enjoying the sight of a pair as I sat on the edge of the chalk escarpment overlooking the Oxford Plain at Chinnor; they were not very busy I think, for they were flying and chasing each other about for a long time. A poor Crow in the vicinity was slightly victimised too, for one of them was every now and then pursuing him, though certainly with no carnivorous intentions.

This habit of hovering in the air makes the bird not only a good mark for a telescope, but also for a gun, and as gamekeepers generally shoot it on principle, so amateur sportsmen think it capital practice to aim at it. Every gamekeeper's museum contains a few slaughtered Kestrels, though I believe there are a few lords of wide domains who order them to be left alone, but the company of such is certainly 'limited,' while the sworn foes of the poor creature may well be named legion. Its food consists of mice, small birds, cockchaffers, and other insects, slow-worms, and even earth-worms; on the sea shore it eats crabs and other marine creatures. It is sad to be obliged to say that the Kestrel is a cannibal; it is exceedingly pugnacious even with its own species, and Mr. Newman, in his interesting history of British Birds, relates an anecdote of a female devouring her

lord after a keeper had shot him. It enjoys bathing exceedingly, and when kept in captivity should be supplied with a large vessel of water every day in summer. It is believed to prefer taking possession of the nest of another bird, to building one of its own, though it does perform the latter act occasionally. The nests of the Rook and Magpie are preferred. The eggs are thickly mottled all over with rich brown markings, sometimes completely covered; the first I received at Wycombe were brought to me as a Screech-Owl's, and I saw several in a window in Marlow, which the proprietor was selling for Sparrowhawk's, and he was not at all pleased when I said what they were.

HY. ULLYETT.

Proceedings of the Society.

FOURTH WINTER SESSION, 1868—69.

THE first Evening Meeting was held on Tuesday, November the 24th, at the house of the President, the Rev. T. H. Browne, F.G.S., F.R.M.S. The exhibitions were numerous. In a glass tank was contained a living specimens of the Fresh-water Sponge (*Spongia fluviatilis*), taken from the river at Hughenden, where it is to be found only in one locality. There was a large collection of fossils lately obtained from the Purbeck and Lower Oolite formations in the neighbourhood of Weymouth. Amongst those especially noticed were fish and reptilian remains, and a large series of the *ostrea acuminata* from the Fuller's earth, illustrating the great variety of forms which this oyster assumes. Attention was especially directed to a collection of shells belonging to the genus *Pinna* or Wing-shell family. There were specimens from British and foreign seas, and fossil specimens from different strata. These were intended to illustrate the formation of the shell of this mollusk. With the exception of the *Pinna granulata* from the Kimmeridge Clay, Wheatley, each specimen, when seen through the microscope, exhibited the prisms of which the external part of the shell is composed. Difference in size alone distinguishes them, and the want of that peculiar dark tint in the fossils which is so observable in the recent forms.

Entomology was represented by some beautiful specimens of butterflies, *Vanessa Cardui*, *Colias Edusa* and *C. Hyale* were sent by the Rev. Bernard Smith, of Marlow; *Sphinx Convolvuli* and *V. Cardui* were exhibited by the President, also some very perfect specimens (third brood?) of the Small Copper (*Phlaeas Polyommatus*), taken on the second of October. Mention was made by the President of a variety which he had seen in the district without spots on the front wing, but with the dark band on the hind margin much broader than usual.

The President in his opening address, after referring to the re-appearance of some scarce insects in our neighbourhood, directed attention of the members to the remarkable abundance of a Saw-fly (*Dolerus Coracinus*) in the beginning of the year. This insect is very like the *Dolerus niger*, but distinguished from it by the presence of a red spot at the basal joints of the wing. The imago appeared in March, and attracted but little attention. In a very short time the larvæ swarmed by myriads. The parenchyma of the leaves of a weeping Ash was consumed as if by magic. It seemed impossible to destroy the larvæ. Thousands upon thousands were shaken down and swept away, but there was no apparent difference in their numbers or destructiveness. He took occasion from the exhibition of this insect to explain the physiology of the Saw-fly, and pointed out the mistakes sometimes committed by writers in popular periodicals, when describing this as well as other families in the insect world.

The President then gave a short description of his observation of the transit of Mercury—which took place on the fifth of November. The heavens were most propitious. There was not a cloud upon the eastern sky. When the sun had risen above the mists of the horizon there was nothing to hinder the most perfect observation. With powers of magnification ranging from 90 to 150 diameters Mercury's disk was as clearly defined as if engraved with a diamond. But though carefully watched for, the apparent prolongation of the form of the planet by the so-called dark bands or protuberances was not seen. Yet the planet was observed up to the last internal contact with the limb of the sun.

A few minutes were spent in speaking of the "November Meteors," which, according to calculation, our earth ought to have passed through about 6 p.m. on the thirteenth of the month. The portion of the heavens in which the phenomena were to be seen at that time was below our horizon—and consequently invisible to us. Some were seen by a gentleman at Wycombe on the fourteenth day. But the grand display was observed by Professor Phillips at Oxford, between three and four in the morning of the fourteenth.

The President briefly brought before the members the substance of what is now known respecting these remarkable appearances, the apparent similarity of their orbit with that of Temple's Comet of 1866—the influence which the planet Uranus has exercised on them—and the immense magnitude of the arc of space which is probably filled with these extraordinary bodies.

The Secretary read a long and comprehensive paper "On English Plant-Names," which was listened to with great attention. Commencing by deprecating the notion that there is little or no meaning in our local plant-names, he proceeded to give a general idea of the various sources to which they might be traced. Examples were given of names adopted, or corrupted, from the Anglo-Saxon, Swedish, Danish, German, French, Latin, and Greek; the influence of the Church upon the people was illustrated by many names, handed down from, or associated with, the middle ages; those plants which take their titles from a resemblance, real or imagined to other objects, were referred to, the "doctrine of signatures" was glanced at, and its results were shown. The paper, which will be published in 'Science Gossip' for February next, was intended to give a general view of the subject; and it was hinted that a second was in preparation, in which the more strictly *local* names would receive due attention.

The meeting, which was prolonged until a late hour, closed with an exhibition of the President's binocular microscope.

SECOND EVENING MEETING, DEC. 29.—Held, by kind invitation, at the house of T. Wheeler, Esq. Among the objects exhibited were the following: A very beautiful specimen of "Venus' Flower-Basket" (*Euplectella speciosa*), from the shores of the Philippine Islands; a box of Lepidoptera, including a fine *Sphinx Convolvuli*, taken in the district; fossils, &c., by the President; a collection of British *Orchidaceæ*, by Mr. Ulyett; and some beautifully executed drawings of wild flowers, chiefly from our own neighbourhood, by the Misses Giles. Mr. Ulyett read an interesting paper on "Winter Work," which contained many useful hints and practical suggestions; this was followed by one by the Secretary, on "Additions to the Wycombe Flora, 1868," which will be found at p. 59. The President gave one of his popular addresses, the subject selected on the present occasion being "Sharks." The various scientific classifications of fishes was referred to, such as the division of this branch of Natural Science into the Heterocercals, or unequal tails, and the Homocercals, or equal tails; the Osseous and the Cartilaginous fishes; and the Placoids (plate-form), the Ganoids (shining-form), the Ctenoids (comb-form), and the Cycloids (circle-form). These names refer to the shape of the scales. The position in each of these great divisions which the Shark tribe occupied was referred to. The subject was treated geologically, reference being made to the

sharks of recent times, by way of illustrating the remains of the more ancient fishes. The President spoke of the appearance of these Heterocercal fishes in the Silurian Seas, and of their co-temporary appearance with the Ganoids from the commencement of the old Red Sandstone until the end of the Oolite period. After that time, the crushing (*palatal*) teeth that had been so common in the past ages of the geologic world passed away, the Sharks of the tertiary and more modern times being armed only with the sharp and cutting dentition so characteristic of these inhabitants of recent seas. The only known exception to this latter statement, being the Port Jackson Shark, and some of the Dog fishes and Rays (*Raiædæ*). The fact was referred to, that but few remains of the Shark tribe are preserved in the various geological formations. The reason assigned for this fact, was, that the whole skeleton of this fish being cartilage and not bone, after death it would dissolve before it could become petrified. The address was illustrated by many specimens of teeth and vertebræ belonging to geological and recent species. There was also a numerous collection of teeth and scales of Ganoid fishes from the carboniferous and oolite formations. Amongst other microscopic illustrations at the close of the meeting, were sections of the scale of *Lepidotus Mantelli*, from the Wealden, Tilgate Forest; and the scale of a Ganoid-fish from the Coal Shale, Newcastle. In this object the perforations of the scale were pointed out, and the connection of each of these foramina by means of channels similar in appearance to Haversian Canals. The whole scale exhibited lacunæ and canaliculi which appeared to assume the appearance of Mammalian rather than of Ichthyic type. These cell-markings were grouped around the perforations like the concentric layers of lacunæ around the apertures of the Haversian Canals in transverse sections of mammalian bones. The members were especially interested in a specimen of fresh water Shrimp so common in the wells of the town, and a beautiful oceanic form of Crustacean (minute Shrimp), *Pontella*, *n. sp.*, as well as another exquisite microscopic object—the tongue (*Odontofore*, Huxley) of the Ear-shell Mollusk (*Haliotis tuberculata*)—from Guernsey.

Books Received.

One Thousand Objects for the Microscope. By M. C. Cooke.

This little work comes with peculiar fitness from one who has done so much to popularise the study of Natural History. When we state that it

contains 124 pages of clearly-printed letter-press, and 12 plates, absolutely crowded with figures, and that its cost is one shilling, none can doubt its cheapness; and Mr. Cooke's name is sufficient guarantee of its accuracy. It contrasts favourably with the last work on Natural History issued in the same series—we refer to a book called “Old English Wild Flowers,” which, for inaccuracy in almost countless statements, and for total ignorance of the principles of composition, stands, we would hope, by itself. This reference is rendered the more necessary by a review (?) of the work which appeared in the “Field” some time since. We have never hesitated to recommend books to our readers; neither shall we refrain from warning them against such as are untrustworthy: and, while contributing our meed of praise to Mr. Cooke's work, we cannot but express our sorrow that “Old English Wild Flowers” should ever have been published.

The Quarterly Journal of the Folkestone Natural History Society, No. I.

We gladly hail the appearance of another Magazine, conducted on principles similar to our own, which reports the proceedings of the Society in which Mr. Ulyett occupies the same post which he filled so ably while amongst us. In this number we have three papers, one of local, and two of general interest; as well as the commencement of two others—one, “On the Fertilisation of Orchids,” an interesting, if somewhat abstruse, subject; the other, entitled “Experiences of Aquarium Life,” being a pleasantly-written autobiography of *Planorbis complanatus*. Correspondence, and short notes, complete the number. We trust that succeeding issues will be as creditable to the Society as the one before us.

Proceedings of the Bristol Naturalists' Society, Sept., Oct., and Nov.

In addition to the reports of “general meetings,” which these proceedings give us, there are notices of “meetings of sections,” which appear to have been well attended. We congratulate the Bristol Naturalists on the organisation of their society, as well as on the possession of real workers, which such an organisation not only implies, but demands. We observe that the rambles of the different sections appear to have been well attended; this augurs favourably for the prosperity of the Society.—We have also received the *Fifth Annual Report of the Belfast Naturalists' Field Club*, from which we are glad to learn that this Society is also progressing satisfactorily.

Correspondence.

THE COMMON BUZZARD (*Buteo vulgaris*).—"A Common Buzzard was shot in Windsor Great Park by one of the keepers in the summer of 1857. Another specimen was procured there about the same time, but by the time it reached the bird-stuffers hands it was useless. These two birds had been seen about for some time together and were probably a pair." Such is the first paragraph in Mr. Clark-Kennedy's description of this rare bird, and it justly explains the cause of its scarcity. However, game keepers are not the only destroyers of our birds of prey, for I have lately received a long and interesting account from a gentleman in the neighbourhood, Mr. R. Spicer, of Marlow, of his share in the discovery of a Buzzard's nest, and the taking of the eggs. It was in the year 1806, when he was a pupil of the Rev. Thomas Scott, at Gawcott, near Buckingham, that he and his two fellow pupils, while shooting in the neighbourhood, discovered a Buzzard's nest in the top of a high Oak tree. The tree was of great size, and the nest was built on a fork which towered some 5 feet above the rest of the tree. His companions tried, but in vain, to reach the nest. My informant then essayed to do so, and after labours which nearly exhausted him, succeeded in gaining the summit, and to his great joy found two eggs, very round, large, and thick, white, with yellow spots, and strongly resembling turkeys' eggs. After a long rest, rendered necessary by his exhausting efforts, he descended safely. The nest is described as being built of sticks, lined with bents. The above act of spoliation, although much to be lamented, will be excused on the sins of youth, and of the great temptation offered, which, I fear, would have been resisted by few. However, the instance quoted by Mr. Clark-Kennedy and the one I have narrated show that it is only owing to the relentless persecution

of our birds of prey that they are becoming more scarce every year. Many species, including the Kite, are now seldom seen in districts where they were formerly comparatively common. That they would become so again there is but little doubt, were not the spirit of extermination so rife, and so indiscriminating in its operation.

T. MARSHALL.

IN the last number of "The Quarterly Magazine of the High Wycombe Natural History Society" is a paper by Mr. W. R. Tate, "On the Future Existence of the Lower Animals," in which it is stated that they did not prey upon each other before the fall of man. Allow me, without entering upon the subject of the paper, to correct that statement. A great many species of carnivorous animals existed long before the appearance of man upon the earth. The bones of animals found in caves often bear the marks of the teeth of the hyænas and bears that lived in the caves, and whose remains are also found there, together with their excrement, composed mainly of phosphate of lime, derived from the bones of their victims. Remains of crustaceans also are found in the unejected fæces (*coprolites*) of the great Liassic sauria, lying *in situ* between the ribs of the skeletons.

W. H. DALTON.

LITTLE AUK (*Mergulus melano-leucos*) AT ABINGDON.—"One of our keepers shot a Little Auk on the Thames here yesterday. As our nearest point to the sea is distant some sixty miles, the appearance of such a bird is a singular occurrence. The Common Gull is not unfrequently seen here after heavy gales, but a bird of the diver tribe must have been very hard pressed to take such a long inland flight. E. W. HARCOURT (Nuneham Park, Abingdon, Nov. 7)"—*Field*, Nov. 14, 1868. Mr. Clark-Kennedy, in his "Birds of Berks and Bucks," notes only two previous occurrences of the bird

in the two counties. Mr. T. C. Garth, in the "Field" of the same date, notes the killing of a Quail, "plump and in good order," at Twyford, on Nov. 7.

A SWALLOW AT CHURCH.—A curious occurrence took place during morning service in the Parish Church of Bradfield, near Reading, on Sunday, Oct. 4. While the collect for peace was being read, a young swallow settled on the shoulder of a gentleman, where it remained during the anthem, Litany, and a portion of the Communion Service. T.S.—*Field*, Oct. 17, 1868.

SPHINX CONVULVULI.—The Rev. J. J. Goodall, of Dinton Hall, Aylesbury, writes to the "Field" as follows:—"I never knew a season here without them, especially about the time of flowering of *Aster amellus*, over which I have often seen half-a-dozen hovering, protruding their long probosces in search of honey. From the fact of a few of my visitors having observed this most interesting insect, I suppose it must be locally very uncommon. Though more plentiful than usual here last season, this year they are more so than ever known before. I have frequently seen at one point of view more than a score skimming over a belt of the common garden valerian. I fancy it is rather remarkable that, whilst the moths are on the wing, specimens of the same animal in its caterpillar state fully three inches and a half long, and two inches and a half in girth, should be feeding on the leaves below."

[Mr. Goodall must be situated in a very favourable locality. The perfect insect has, we know, been exceedingly abundant this year; but the appearance of the caterpillar seems to require confirmation.]

THE SPARROWHAWK AND THE KESTREL.—One day in November last, I saw two birds fighting in the middle of the road near the railway bridge which crosses the Bradenham road. I drove hastily to see what the disturbance was about, and on approaching the combatants I found they were two hawks, one of which had got a Greenfinch in its talons.

When I had got within twenty yards, both the birds took flight, and I discovered that one was a Sparrowhawk and the other a Kestrel. The Kestrel settled in a field close by and commenced eating the bird it had caught: the Sparrowhawk settled in a hedge near, and when I got opposite, darted away and commenced hunting up and down the hedge side. I dare say if I had not come up when the fight began, the Sparrowhawk would have robbed the Kestrel of its prey. I have been fortunate in seeing more than once the pugnacity of the Sparrowhawk. About two years ago, in the lane leading to Toweridge from West Wycombe, I knocked down with my whip a Sparrowhawk which had caught a Blackbird. I was within three yards of the bird when seized by the Sparrowhawk, and was successful in rescuing the sweet songster, which appeared very frightened at first, but doubtless thankful that a protector was so near at hand.

R. M. BOWSTEAD, M.D.

NATURALISTS' KALENDAR.—We hope, during the coming season, to present our readers with a somewhat novel and interesting feature, in the shape of a record of the more remarkable objects observed by the members of the Society in our own district or neighbourhood. The times of the flowering of our plants, the dates of the arrival and departure of our migratory birds, the appearance of rare visitors—all these will, it is hoped, find a place. It must be evident to all that, for the success of this project, we must depend mainly upon our members and readers for support; and we trust that they will not fail to render us the requisite assistance.

THE GLASTONBURY THORN.—There is, in Wycombe Park, a tree of this variety, known as *Crataegus oxyacantha præcox*, which usually buds, but does not blossom, in December. This season, however, many blossoms have fully expanded, induced by the mildness of the weather to put in an appearance; their perfume being quite as powerful as that of those which expand at the more usual time.

A List of Buckinghamshire Orchids.

[The localities following the initial S are in South Bucks; those preceded by N are in the North of the county. The river Thame separates these divisions. ! following a locality, signifies that I have seen a specimen collected there.]

ORDER ORCHIDACEÆ.

ORCHIS *Linn.*

O. Morio, L. Green-winged Orchis. S.—Not unfrequent in meadows and on grassy commons; Whittington Park; Wooburn; Denham; Drayton Beauchamp; Weston Turville; Dinton, &c. N.—Addington; Buckingham, &c. Flowers in May.

This species varies greatly in the colours of its flowers. I have found them white, flesh-coloured, and pale purple.

O. mascula, L. Early Purple Orchis. S. and N.—Meadows, open places, and woods, frequent. Flowers in May.

A very variable plant. On dry, exposed banks, as on Keep Hill, the spike is lax and few-flowered; in woods, it is often dense and many-flowered: the scent is equally variable, being in some specimens very agreeable, in others, growing in the same locality, extremely unpleasant. The absence of green veins from the petals and sepals, and the brighter colour of the blossoms, render this species readily distinguishable from *O. Morio*. The Buckingham names for *O. mascula* are "Ring-finger," "King-fingers," and "Cuckoos;" the two former are at present unexplained; the latter refers to the appearance of the plant in spring, when "the Cuckoo doth begin to sing his pleasant notes without stammering."

[*O. purpurea*, Huds. Lady Orchis. S.—Mr. T. P. Lucas recorded this from Downley; Dane Garden Wood; and Fennell's Wood; a diligent search in these localities has only resulted in the discovery of *O. militaris*, which was probably mistaken for this species.]

O. militaris, L. Military Orchis. S.—"Marlow Wood in plenty, *Mr. Gotobed*: Woods between High Wycombe and Great Marlow; *Mr. J. Rayer*." *Botanists' Guide*, i. 39; "Between Henley and Fawley; between High Wycombe and Hitchenden." *Eng. Bot.*

Supp.; Fawley Wood, *Mr. Stubbs*!; Eversdown, near Henley, *History of Henley*; "Very sparingly in the wood overhanging the Henley road at Medmenham." *Phytologist*, i. 993. o. s; Dane Garden Wood, Wycombe; and Fennell's Wood, Loudwater; Chesham!; Middle Claydon, *Rev. H. H. Crewe*.

This rare and beautiful species is usually in blossom about June 1. I once found a variety in Dane Garden Wood, having pure white flowers, bordered with reddish-purple.

O. maculata, L. Spotted Palmate Orchis. S. and N.—Woods and pastures, generally distributed. Flowers in May and June.

O. latifolia, L. Marsh Orchis. S.—Meadows near the Colne, Denham, *The Miss Drummonds*.! [A specimen found in Whittington Park, by the Rev. W. H. Painter, and supposed to belong to this species, was probably a large form of *O. maculata*.] Flowers in June.

O. incarnata, L. S.—Meadows near the Colne, Denham, growing with *O. latifolia*, but flowering rather later. *The Miss Drummonds*. Flowers in June.

O. pyramidalis, L. Pyramidal Orchis. S.—Chalky woods and open places, not unfrequent: Marlow; Wycombe; Hughenden; Denham; Chesham; Drayton Beauchamp; Aston Clinton, and Buckland; Wendover, &c. N.—Akely Wood, Buckingham, *Mr. W. Walker*! Flowers in June and July.

GYMNADENIA R. Br.

G. conopsea, R. Br. Sweetscented Orchis. S.—Chalky woods and banks, frequent. "Woods between the Oxford and Wycombe roads; woods at Medmenham;" *Phytologist*, i. 993, o. s.; Dane Garden Wood; Fennell's Wood; Hughenden Woods, very fine; Wendover; Drayton Beauchamp; Chesham. Flowers in June.

ACERAS R. Br.

A. anthropophora, R. Br. Man Orchis. S.—Near Wendover, *Rev. H. H. Crewe*. *Listera ovata* is frequently mistaken for this; but the two leaves of the Twayblade at once distinguish it. Flowers in June or July.

HABENARIA R. Br.

[*H. viridis*, R. Br. Frog Orchis. S.—“Marlow Wood, rare. *Mr. Gotobed*.” *Botanists’ Guide*, i. 39. I do not know which wood is intended under this name, but have never seen *H. viridis* anywhere in the county.]

H. bifolia, R. Br. Small Butterfly Orchis. S.—Heathy places Naphill Common, High Wycombe.

This has been recorded from several other localities, but I believe *H. chlorantha* is intended in all other cases. Flowers at the latter end of June.

H. chlorantha, Bab. Large Butterfly Orchis. S.—Woods and shady banks, frequent. Marlow; Lane End; Turville; Wycombe; Chesham; Wendover; Drayton Beauchamp; Denham, &c. N. Akely Wood, Buckingham. *Mr. W. Walker*. Flowers at the end of May and in June.

OPHRYS Linn.

O. apifera, L. Bee Orchis. S.—In several localities, but usually in small quantity. Chalky banks and open places in woods. “Woods between the Oxford and Henley roads,” Marlow, *Phytologist* i. 993. o.s. Fawley Wood, *Mr. Stubbs*; formerly “most abundant in a field at the back of the three houses on the bank near Miss Harrison’s mill [between Wycombe Marsh and Loudwater], close to a little wood of firs,” *Mr. Aug. Gaviller, in lit.*; Keep Hill; Fennell’s Wood; White Hill, near Beaconsfield; Hughenden Woods; “Gerrard’s Cross, in a chalk pit, plentifully,” *Blackstone*; Whiteleaf Cross; Chesham!; Canal bank and rectory meadows, Drayton Beauchamp, *Rev. H. H. Crewe*. Dinton; Wendover. N. In an old disused stonepit near Buffler’s Holt, Buckingham!; only three plants found. *Mr. W. Walker*. Adstock, about three or four miles from Winslow, *Mr. J. Mathison*. Flowers in June and July.

O. muscifera, Huds. Fly Orchis. Woods, frequent; occasionally on exposed chalky banks. S.—“In almost all the woods about Marlow, more or less,” *Phytologist* i. 993, o.s.; Fawley Woods; Hughenden, in the woods and on the slopes; Fennell’s Wood; “Woods about Ellesborough, near Aylesbury, most abundantly,” *New Botanists’ Guide*, 162; Drayton Beauchamp; Wendover;

Chesham; abundant in a wood near the Tile House, Denham, *The Miss Drummonds*. Flowers in May and the beginning of June.

HERMINIUM *R. Br.*

H. Monorchis, *R. Br.* Musk Orchis. *S.*—"In a chalkpit by the roadside at Gerrard's Cross," *Blackstone*; Keep Hill, Wycombe, above the quarry and near the Park palings. Flowers in July.

SPIRANTHES *Rich.*

S. autumnalis, *Rich.* Lady's Tresses. Dry open places *S.*—The slopes, Fawley Court, *Mr. Stubbs*; Whittington Park; lane leading from Loudwater to Flackwell Heath, *Mrs. Lucas*!; formerly found in a field near Juniper Wood, Denham, but not observed of late years, *The Miss Drummonds*; Great Hampden, *Rev. H. H. Crewe*; Hyde Heath, near Chesham, *Miss Dora Stratton*!; Flowers in August and September.

LISTERA *R. Br.*

L. ovata, *R. Br.* Twayblade. Woods and damp places, not very common. *S.*—Whittington Park; West Wycombe; Hughenden; by the Dyke in Wycombe Park; Drayton Beauchamp; Taplow; Denham. *N.*—Addington, *Mr. J. Mathison*; Tingewick Road, Buckingham, *Miss Chandler*! Flowers in May.

NEOTTIA *Linn.*

N. Nidus-avis, *Rich.* Bird's-nest. Shady woods, frequent. *S.*—"Wood near Temple House, plentiful," *Blackstone*; "Marlow Wood, frequent, *Mr. Gotobed*," *Bot. Guide* i. 39; Fawley Wood; Wycombe Park; Hughenden Woods; Dane Garden and neighbouring woods; Drayton Beauchamp; Wendover; Chalfont; and many other places. *N.*—Akely Wood, Buckingham, *Mr. W. Walker*! Flowers in May.

I never saw this plant in greater profusion than on the steep tree-covered hill at Cliefden, above the river. It appears to flourish in the dense shade which destroys all other plants, and attains a size rarely met with elsewhere.

EPIPACTIS *Rich.*

E. latifolia, *All.* Helleborine. Hilly woods. *S.*—Wycombe Park; Dane Garden Wood; and in several woods in the neighbourhood. [The following localities may apply either to this, or

to the following species ; Chesham ; Denham. N.—Akely Wood, Buckingham, in a part of the wood since cleared, *Mr. W. Walker*; a solitary plant in a wood at Emberton, five or six miles from Newport Pagnell, *Mr. J. Mathison*.] Flowers in August.

E. media, Fries. Helleborine. S.—In the same Wycombe localities as those given for the preceding. Flowers in August.

β . *E. purpurata*, Sm. “There is an *Epipactis* growing in the Stokenchurch woods, which is, in its young state, quite purple in both leaves and stem ; it must, I suppose, be *E. purpurata*. I have seen it also in Bisham Wood, but have not had an opportunity of seeing it in flower.” *G. G. Mill* in *Phytologist* i. 993, o.s. A specimen corresponding with these particulars was found by *Mrs. Lucas*, near Hampden ; it was not in blossom.

If I am correct in distinguishing *E. latifolia* from *E. media*, I may mention the following differences between them. *E. media* is a taller plant than *E. latifolia*, and is altogether lighter in colour ; the lip, which is purple in *E. latifolia*, is often almost colourless in *E. media*, and the latter blossoms a few days earlier than the former. In *E. media* the lip is longer than broad, terminating in a sharp point ; in *E. latifolia* it is broader than long, and the point is blunt, usually curved under. The occurrence of a solitary Helleborine in a large wood, recorded above, calls to mind a singular circumstance in connection with the species, which is shared by the Bee Orchis and others. I refer to the sudden appearance, of the plant in certain localities. A few years ago, an *Epipactis* appeared in the shrubberies, lawns, and even the flower-beds of Chase Cottage, Enfield ; a few plants even sprung up in a neighbouring meadow. No cause could be assigned for this. Near Broome Park, Kent, a certain field was under the plough for forty years, after this it was laid down for grass, and the third year after it was thus laid down there appeared in it at least a hundred Bee Orchises. (*See Phytologist* vi. 298-300, N.S.)

E. palustris, Sw. Marsh Helleborine.—In damp places. S.—Whittington Park, Lane End, *Mr. T. P. Lucas* ! Flower June.

CEPHALANTHERA *Rich.*

C. grandiflora, Bab. White Helleborine.—Woods ; occasionally, but rarely, in open places. S.—“Woods about Marlow, and other parts of the county.” *Hudson* ; Wood at Harleyford,

Phytologist i. 993, o.s.; Fawley Woods; Cliefden woods, woods about Wycombe, general; Keep Hill, Chesham, Wendover, Drayton Beauchamp, Denham, etc. Flowers in May and the beginning of June.

From this list it will be seen that the *Orchidaceæ* chiefly affect the south of our county. This is, in a great measure, owing to the prevalence of a chalky soil; but it must be remembered that North Buckinghamshire is still unworked, and it is hoped that several species, at present unrecorded for that division, may reward those who will take up the subject.

JAMES BRITTEN.

The Birds of Cookham and the Neighbourhood.

Continued from page 54.

Genus CURRUCA.

51. *Curruca hortensis*. The Garden Warbler.

We frequently meet with this species at Cookham, especially during the autumn, when the elder-berries are ripe. At that time these birds congregate in the elder trees in company with the Blackcaps, and commit great havoc; I have seen as many as ten or twelve birds in a tree at the same time. A pair of Garden Warblers in my collection were procured by Mr. Briggs, on the 7th of July, 1867, and were shot by him very early in the morning. They were both busily engaged in hunting for insects under the leaves at the top of an elm tree, and were feeding in company; on dissection, however, they turned out to be both males. I remember on one occasion finding a Garden Warbler's nest at Steeple Gidding, in Huntingdonshire, built in an open scrub, far away from any other trees or bushes.

52. *Curruca atricapilla*. The Blackcap.

As I have just mentioned, the Blackcap is often observed in the autumn in company with the foregoing species on the elder trees. It sometimes breeds in the grounds at Formosa, and one hen-bird

in my collection was picked up on the carriage-drive, completely egg-bound. I may add that in my collection I have a pair of Blackcaps from the River Gambia, in West Africa. This fact is interesting as showing the locality to which the bird takes its flight in winter. I believe, however, that the Blackcap often remains in this country the whole year round.

Sub-fam. CALAMOHERPNIÆ.

Genus LOCUSTELLA.

53. *Locustella Rayi.* The Grasshopper Warbler.

A single specimen of this Warbler is in Mrs. De Vitré's collection at Formosa. It was obtained by Mr. Briggs in a small hedge close to Cookham church-yard. His attention was drawn to it by its peculiar note, and he tells me he had very great difficulty in perceiving its whereabouts, in consequence of the ventriloquial character of the note, but he succeeded at last in finding and shooting the bird. With regard to the deceptive character of the note of the Grasshopper Warbler, Mr. H. Whitely, of Woolwich, a well-known and experienced field-naturalist, informs me that he has observed the same peculiarity, and he accounts for it in this way. In watching the habits of birds among the furze on open commons, he has often been within a few yards of Grasshopper Warblers, and as the bird creeps among the lower twigs of the furze-bushes it only emits a slight noise, which by degrees increases in intensity; he has observed the throat on these occasions, and has distinctly noticed the increased effort on the part of the bird.

Genus CALAMODYTA.

54. *Calamodyta phragmitis.* The Sedge Warbler.

This species is common all along the banks and reed-beds of the Thames in summer, and I have frequently found their nests.

Genus CALAMOHERPE.

55. *Calamoherbe strepera.* The Reed Warbler.

This bird is usually known by the name of the Reed Wren, but as I have before observed, we ought to be careful in assigning

the proper names to the different species of British birds, a rule very often neglected even by experienced ornithologists. The present bird has nothing at all to do with the Wrens (*Troglodytes*), any more than the Willow Warbler, usually miscalled the Willow Wren, has.

The Reed Warblers, as observed at Cookham, always build in the reeds on the banks of the Thames, or in the willows overhanging the water. On no occasion have either Mr. Briggs or myself noticed them building their nests at any great distance from water.

Fam. MUSCICAPIDÆ.

Genus BUTALIS.

56. *Butalis grisola.* Spotted Flycatcher.

This familiar bird is known by every one who has a garden, for nearly every verandah or trellis-work round the house is certain at one time or another to have been occupied by a Flycatcher's nest. At Mr. Burrows' house, at Cookham, I have seen two Flycatcher's nests in close proximity, and have taken great delight in watching the little birds busily engaged in feeding their young, and so fearless were they, as not to heed in the least the presence of many spectators. It is believed that the same pair always occupy the nest, which has been tenanted for a great many years.

At a recent meeting of the Zoological Society, Mr. A. D. Bartlett, the well-known Superintendent of the Society's Gardens in the Regent's Park, mentioned that under the nest of a pair of Flycatchers built in his house in the gardens, he used to notice little pills upon the ground, being, as he expresses it, "the most beautiful blue pills he ever saw in his life." On examination he found that these little pills were pellets thrown up by the Flycatchers, while the metallic blue appearance which they presented was caused by the remains of the outside cases of the bodies of blue bottle flies on which the birds had been feeding. I may mention that the Spotted Flycatcher was among the birds recently brought home by Mr. Jesse, from Abyssinia.

Fam. LANIIDÆ.

Genus. LANIUS.

57. *Lanius excubitor*. The Great Grey Shrike.

Mr. Briggs informs me that he has known several instances of the occurrence of this Shrike in the neighbourhood of Cookham, the latest being one shot at Hedsor, in the autumn of 1867.

Genus. ENNEOCTONUS.

58. *Enneoctonus collurio*. The Red-backed Shrike.

This bird was formerly plentiful, but is now scarce at Cookham. I shot a male bird on May 27th, 1865, as mentioned in the *Naturalist* (vol. ii. p. 89.) Since then I have only obtained one other specimen, likewise a male, which Mr. Briggs shot. On the 30th November, 1868, some bird-catchers noticed a brown bird fly in pursuit of a wren in a wood at Hampstead, and succeeded in capturing both pursuer and pursued. The bird turned out to be a young female Red-backed Shrike, which must have been hatched very late to have been met with in this country in November. Both birds are now in the collection of my friend, Mr. W. T. Ansell, who had them preserved to commemorate the occurrence.

I have in my collection several fine specimens of *Enneoctonus collurio*, from Damara Land in South-West Africa; and Mr. Jesse also met with it during the late Abyssinian expedition.

Fam. TROGLODYTIDÆ.

Genus. TROGLODYTES.

59. *Troglodytes europæus*. The Common Wren.

I can say nothing concerning the well-known "Jenny Wren," which would be new to my readers. It is common at Cookham, and breeds plentifully in the neighbourhood.

Fam. PARIDÆ.

Genus. PARUS.

60. *Parus cæruleus*. The Blue Titmouse.61. *Parus major*. The Greater Titmouse.

These two species are common at Cookham.

62. *Parus ater*. The Coal Titmouse.

Unlike the two last-named birds, the Coal Tit is by no means plentiful near Cookham, and I have only one specimen in my collection.

*Genus PÆCILE.*63. *Pæcile palustris*. The Marsh Titmouse.

This bird, the reasons for the generic separation of which I fully explained in my paper on the "British Tits" read some time ago before the Society, is rather more plentiful than the Coal Titmouse, but cannot be said to be common.

*Genus ACREDULA.*64. *Acredula rosea*. The Long-tailed Titmouse.

I would draw attention here to the facts lately published by me in the 'Ibis,' which may not have been seen by my readers, of there being two distinct species of Long-tailed Tit found in Europe, both of which have been met with in Great Britain. I therefore give the following extract, the particulars of which will doubtless interest many not previously acquainted with the subject.

"I am sure that no ornithologist, comparing carefully the plate of *Parus caudatus* in Mr. Gould's 'Birds of Europe' with any coloured figure of the bird of the same name in the works of German or Scandinavian authors would consider that they represented the same species; for the male of the Scandinavian bird is always figured with a white head, while the male of the British species has a band on each side of the head extending from the eye to the nape, the female only of the former having a dusky band on each side of the head, as in *both sexes of the English bird*. This, then, is the principal point on which I ground my proposition that they ought to be recognized as specifically distinct, viz., that the sexes of the British bird are alike, while in the Scandinavian Bottle-Titmouse they differ considerably one from the other. Nor is my conviction founded on figures in any work alone; for I have specimens from Great Britain, Denmark, Holland, and Germany; and I propose now to consider the geographical distribution of the two species, so far as the material I have at hand will allow me;

and it will be seen that all I have to add is in favour of their specific separation."

For the loan of the Danish birds I am indebted to the Rev. H. B. Tristram, who has always most kindly lent me specimens to aid me in my studies; but as in the present instance the sexes of the specimens were not marked, I cannot rely on their correct determination. They are both young birds, in which stage of plumage the two species approach each other; but Scandinavian examples always have the white on the head and throat much purer than in any British specimen I have yet seen. I possess, however, through the kindness of Mr. J. G. Keulemans, of Leyden, a pair of adult birds from Holland, concerning which he has sent me the following note:—"The two birds I have sent you are male and female. The old male has a pure white head, and is less rufous on the back. Very young ones resemble the female, but are browner on the head. You will thus see that I have sent you a pair of adult birds. It is seldom that *Parus caudatus* is found breeding in the winter time. It breeds in Northern Europe and only comes to us in winter; and from October to March they are seen flying in flocks of from five to twenty individuals. These flocks consist of the old birds and the family of young ones."

From the foregoing remarks it will be seen that the white-headed Titmouse only comes to Holland in the winter. In Denmark, Norway, and Sweden, however, it breeds, according to the ornithologists of those countries, and in the two last-mentioned as far north as lat. 63 degrees*. Still in Norway it is probably a local species, for my friend Mr. F. W. Backhouse tried unsuccessfully during a three months' trip last summer to procure me a specimen, and the bird was not known to the country people of whom he enquired.

The white-headed Bottle-Titmouse would, however, seem to be common in Siberia. Middendorff obtained an example in January at Udskoj-Ostrog, between the Stanovoi Mountains and the Sea of Ochotsk, which agreed with European specimens, as

* Wallengren, Naumannia, 1855, p. 136.

did also the birds procured by Schrenck in Upper and Lower Amoorland. Radde likewise procured specimens during his journey through the south of East Siberia, and observes that they agreed exactly with those collected by Schrenck in Amoorland. The birds also which he obtained at Onon and Irkutsk are precisely the same as the European bird, "which," says he "is very extraordinary; for from the Upper Ussuri we have received through Herr Maximowicz a Titmouse which neither in the marking of the head, nor in its proportions, agrees with *Parus trivirgatus* of Temminck and Schlegel, but sufficiently so with old Siberian Long-tailed Titmice."

In Germany it also occurs; and Mr. Harting has very kindly given me a specimen from that country. This is a male, procured in August 1863; and from the worn condition of the plumage it is evident that it had not begun to moult. I mention this because it is suggested by some that the white head is only the winter dress of the Scandinavian bird.

That the *Parus caudatus* of Linnæus was founded upon this persistently white-headed bird there can be, I think, no doubt; and when we consider the characters on which *Motacilla yarrelli* is distinguished from *M. alba*, *Pyrrhula coccinea* from *P. vulgaris*, *Sitta cæsia* from *S. europæa*, and *Troglodytes borealis* from *T. europæus*, we cannot refuse to acknowledge the specific distinctness of the British form, on which the name *Mecistura rosea* was long ago bestowed by Mr. Blyth.*

To be continued.

R. B. SHARPE.

Fern Freaks.†

AMONGST the heroes of ancient mythology that we used to read about in our school days, was one of the water deities named Proteus, who had the rather whimsical foible of never

* WHITE's 'Natural History of Selborne.' With Notes by EDWARD BLYTH. London: 1833; p. 111, note.

† Read before the Society at the Fifth Evening Meeting of the Fourth Winter Session, March 23rd, 1869.

giving anyone any information if he could possibly help it; and who, in order to avoid doing so, adopted the somewhat perplexing habit of turning himself into various forms of birds, beasts, and fishes, and all manner of other objects, animate and inanimate. The name of this very slippery sea-god has been already transferred to a tribe of plants, the Order *Proteaceæ*, because though they agree in essential particulars, they are externally so very unlike each other, that, as Dr. Lindley observed, "the diversity of appearance presented by the various genera is such as would be hard to parallel in the same Natural Order." But I am not at all sure if the tribe of Ferns does not merit the title of Protean quite as much as the *Proteaceæ* themselves; for it is a very large order, and among its two thousand and more species that are already discovered and named, we find a very great variety of form and considerable difference in habit of growth. There is an extraordinary diversity in the form of the fronds—some simple in outline, some deeply cut, and varying in every possible degree between linear and round, heartshaped or triangular. We have only to look at the few species that grow in our own country, and to contrast such ferns as the Hart's-tongue, the Parsley Fern and the Osmunda to see what a pleasing variety there is; but in the numerous foreign species this diversity is much more apparent; and we have them also mimicking the leaves of other plants—so that one has to look at them closely and study their structure before one can believe they are ferns at all.

Then they differ so much in size. Who, that has climbed the passes of our own lake mountains and has seen the lovely little Parsley Fern peeping out from under huge stones, or the delicate Hymenophyllum growing in mossy cushions where the water trickles from the crevices of rocks, would think that these simple little plants claimed for their first cousins the magnificent palm-like Tree Ferns of tropical countries? Not many weeks ago I stood under the shade of one of these tree ferns in a quite romantic fern house at Tatton, the Cheshire residence of Lord Egerton. It was a noble specimen, with a stem some ten or twelve feet high, and a foot or more in diameter, and it was crowned with a plume of fronds so large that, though the building was certainly

twenty feet wide (perhaps more, for I did not ask), they touched the walls on either side and the midribs that supported these gigantic fronds were as thick as my arm. What must they be in their native forests?

In one respect ferns certainly emulate the *Proteaceæ*, for they disguise themselves in a remarkable manner, species running off into very peculiar varieties, or becoming curiously and abnormally developed: and these varieties and monstrosities are all more or less permanent in character, and are very often capable of being propagated; so that the fern-grower obtains an amazing number of varieties, very curious in form, some of them very pretty, but generally very troublesome to name; and it is to these freaks of nature, these varieties and monstrosities that I wish to direct attention, rather than to the distinctive characters of the genera and species.

In a state of nature perhaps there is no tribe of plants less given to hybridisation than ferns, for though they produce an amazing superabundance of seed (a single frond of the common *Polypody* will produce eleven or twelve millions of spores) it is only now and then that they meet with the conditions proper for their germination and growth, so that they do not become very abundant, and the chances of hybridisation are greatly reduced; but under cultivation, where every necessary condition is present—a still and humid atmosphere, a warm temperature and a subdued light—the case seems to be quite different; and I was assured at the Tatton fernery that hybrid ferns spring up in all directions, and that these hybrids are, of course, very difficult to refer to the proper species. I am by no means certain, however, that these young plants are really hybrids, for seedling ferns differ very much indeed from their parents, and mistakes may easily be made; but if they *should* turn out to be veritable hybrids they will furnish an incontrovertible proof, not of the presence of sexual organs, or something analogous to them, in cryptogamic plants, for that is a fact now pretty generally allowed, but that the sexual organs are not in a rudimentary condition, but perform the same functions as they do in flowering plants.

Ferns are very prone to become viviparous, especially in cultivation—indeed, all the curious changes observed take place more freely when ferns are cultivated than they do in a state of nature. Our own Black Maiden-hair Spleenwort (*Asplenium adiantum-nigrum*) nearly always produces young plants on the edges of the leaves when grown in a greenhouse or under a glass case, and many of the exotic ferns are particularly apt to do so, and the fronds then have a very pretty and curious appearance thus fringed with a number of tiny plants. The young plants themselves fall off after a while and take root in the soil.

We often observe fronds of ferns that are forked, sometimes very near to the point, sometimes branching as low as half way down the leaf, and occasionally divided even below the green part of the frond. Sometimes one or two of the pinnæ are forked as well. This development takes place in almost all, if not in all of our British ferns, and I have myself collected fronds of *Blechnum boreale*, *Polypodium vulgare*, *Polystichum aculeatum*, *Athyrium filix-femina*, and of *Scolopendrium vulgare* that were so divided, and doubtless instances could be adduced of the same structure in many other kinds. One year I found a plant of Lady Fern, of which almost every leaf was forked, but the variety has not been permanent, for it has since produced leaves of the usual form.

The Hart's-tongue (*Scolopendrium vulgare*) is perhaps more prone to divide than any other species. One form has its fronds forked near the apex or near the base, the branches again and again divided, and the ultimate tips of the leaf spread out into irregular fan-like expansions, constituting a very marked and peculiar variety which is constant under cultivation. It is called *multifidum*. This fern also produces several other pretty varieties. One called *crispum* has the edges of the leaves beautifully waved and curled in somewhat the same fashion as the leaves of a curled kale.

The Editor of this Magazine received lately from a correspondent in Scotland a very remarkable variety of this fern. The frond was similar in general aspect to the one last described, the leafy portion being more developed than the midrib, thus pro-

ducing a frilled margin; but instead of the leafy part being attached to the whole length of the midrib, it was separated near the apex, and the last half-inch of the midrib stood out like a spine from the surface of the leaf. All the fronds upon the plant were similarly developed; in fact, the variety is one which becomes permanent, and is known as *cornutum*.

Many ferns that have compound leaves such as the Male Fern and the Lady Fern, become very strangely developed, every minute division of the pinnae being extended into a tassel. This variety, which is very pretty, is generally a favourite with fern growers. It is described in each species by the term *cristatus*.

I have several times gathered, both in Cheshire and in Gloucestershire, a variety of the common Male Fern which as far as I know, seems to have escaped notice. It is a very showy variety, growing much larger and more lax than the plant usually grows. The fronds are barren, or produce only a few sori, when the indusium seems to be suppressed altogether. The *pinnae* become very long and broad—not so taper as usual, but the sides parallel and then abruptly contracting—not to a point, but to a rounded apex. The *pinnules* are also very large, and they again are cut into round lobes. I do not know whether this variety is permanent, but as most of the monstrosities of ferns can be perpetuated, I presume that it would be permanent if brought into a garden.

I have a dried frond of the common Prickly Fern (*Polystichum aculeatum*) which has taken a very remarkable form. It grew in my own garden, and had been but recently transplanted from the woods; so that the change of soil and situation probably exercised an influence upon its growth. The lower half of this frond has all the characters of *P. aculeatum*, and differs in no way from the rest of the fronds upon the plant; but at this point it abruptly changes, and the upper half exactly resembles *P. lonchitis*, not only in general form, having short undivided *pinnae*, but even in the absence of brown scales upon the rachis. Whether this frond shews that *aculeatum* and *lonchitis* are permanent varieties of one species, as some botanists think, I do not

venture to say. The other half of my frond *may* be only the variety that is known as *lonchitidoides*, but I have compared it over and over again with veritable *lonchitis*, and I can detect no difference.

Almost every fern is subject to these and other forms of abnormal development, but to notice all the Fern Freaks would require a volume. Here, therefore, I must end my chapter, and refer the reader for further information to Moore's "Handbook of British Ferns," where most of the varieties are described.

ROBERT HOLLAND.

Instinct or Reason?

The following anecdotes may not prove uninteresting; whether exhibiting mere instinct, or some degree of reasoning, I will leave my readers to decide. Instinct and reason are so nearly allied, that though the latter be superior to the former, the shades of difference in many instances are so fine, that the result may without dispute be attributable to either. About sixty years ago a Captain Moore, of Mitcham, in Surrey, and a bachelor friend of the name of Potter, paid a visit to a farmer of the name of Chown, at Chorley, near West Wycombe, for the purpose of enjoying some sport in the way of shooting. They were accompanied by a brace of pointers, one belonging to each. Now, the dog belonging to Mr. Potter, was to him a companion both by night and day, being privileged to sleep in his master's bedroom when at home. Arrived at Mr. Chown's, the dogs accompanying their master in a chaise, no difficulty was experienced until night, when the captain communicated to his friend the unpleasant intelligence that his dog could not be permitted to sleep in his bedroom; for their hostess was one who prided herself on her polished floors, and to have a dog sleep in a bedroom would be an act of unpardonable profanity. Accordingly, with the assistance of their host, a nice bed was prepared in the calves' pen in the cow-house, and just the last thing

before retiring to rest, Mr. Potter, with his friend, saw the dog Ponto comfortably and duly locked in for the night. Early next morning Mr. Potter was up, and his first solicitude was to see after his dog. On arriving at the cow house no familiar greeting met his ear; he unlocked the door, entered the calves' pen, but no Ponto was there. A hole gnawed through the boards showed his way of exit; calling, whistling, was of no avail. Potter fretted and lamented, while the captain gave encouragement that all would be right. Mr. Potter posted a letter, and in a few days received the cheering answer from the housekeeper that Ponto was quite safe lying comfortably on the hearth rug, and that on opening the door the next morning after his departure, the dog was found waiting for admission. The journey from Mitcham was upwards of thirty miles, the river Thames intervening. The dog had ridden to Chorley, but in one night found its way home.

Ruthven, a Bow-street officer, well known in his day for the part he took in the apprehension of the Cato-street conspirators in 18—, related to me that when a young man, he had a terrier of the black-and-tan breed. Mr. Ruthven resided in lodgings consisting of one room, in ——— Street, London. His attendance being required at the sessions held at Kingston-on-Thames, to give evidence against some burglars, he locked his dog Blucher up in his room, walked to Gracechurch-street, where he took one of the two-horse stages, riding outside, for Kingston. He had been there for a few hours attending in court, when one of his brother officers said to him "Ruthven, have you your dog with you?" "No," says he, "I left him at home." "Well," says his friend, "he is here, for I saw him looking about among the people, as if he wanted to find some one;" "Impossible!" says Ruthven. "It's true," says his friend, "he came up to me and I called him by his name, and patted him; you had better come and find him." Ruthven came amongst the people, and in less than five minutes his favourite dog Blucher found him and showed himself much delighted in recognising his master. Ruthven, on his return to his lodgings, found that

the dog had gnawed his way through the door; and successfully carried out a determined scheme to find his master. This anecdote I had years ago from Ruthven himself.—H. G.

Henry Gibbons

Naturalists' Kalendar.

[Under this head we propose to give a record of the more remarkable facts of Natural History connected with our own neighbourhood and adjoining counties: the dates of the flowering of plants, of the arrival and departure of our migratory birds; etc. Any assistance will be gladly received by the Editor.]

The following plants were in blossom at Wycombe prior to Jan. 1: Pilewort (*Ranunculus Ficaria*), Dog's Mercury (*Mercurialis perennis*), Hazel, and Mountain Cranesbill *Geranium pyrenaicum*).

Jan. 1. Daisy, Red and White Dead-nettles, Sun Spurge, Shepherd's Purse, Groundsel, *Euphorbia Peplus*, *Poa trivialis*, and *Veronica Buxbaumii* in flower.

4. Sweet Violet (wild) in blossom.

9. The following garden plants in flower: Mignonette, Carnation, Anemone, Great Periwinkle, Borage, Marygold, *Erysimum Peroffskianum*.

12. Mr. D. Avery observed a pair of Stonechats (*Pratincola rubicola*) on Lane End Common: they have been there for some days. See vol. ii. p. 29.

13. Hedge Mustard (*Sisymbrium officinale*), Strawberry (*Fragaria vesca*), and Barren Strawberry (*Potentilla Fragariastrum*) in flower.

14. *Senecio aquaticus* flowers.

24. A Robin's nest with three eggs in it observed near Buckingham.—*Field*, Feb. 6.

28. A new Thrush's nest. Partridges pair. A fine male Badger captured in Oxford.—“It was a good deal bitten and bruised, and must, no doubt, have been bolted (? baited) not long before. It was kept for about two days alive, but, obstinately refusing to take any nourishment, died in little less than 50 hours after capture. It has been sent to town for preservation,

and will after that be placed in the new Museum, as being the last specimen of this now rare animal known to have been captured in Oxfordshire."—*Field*, Feb. 6.

Feb. 2. Bat (*Scotophilus murinus*) observed at 2.30 p.m. in a street in Reading.—*Standard*, Feb. 4.

11. Hawthorn in leaf.

21. Mezeron in flower in King's Wood. Blackthorn blossoms.

23. Coltsfoot flowers.

24. Butterbur (*Petasites vulgaris*), and Hairy Violet (*Viola hirta*) in blossom. Mezeron in flower in Dane Garden Wood.

March 1. Fumitory (*Fumaria officinalis*) and Moschatel (*Adoxa moschatellina*) flower.

2. Wood Spurge (*Euphorbia amygdaloides*), Stitchwort (*Stellaria Holostea*), and Cowslip in blossom. In the lane between West Wycombe and Downley, two patches of Sweet Violets with claret-coloured flowers were found, as well as a great number with pink flowers.

3. Windflower (*Anemone nemorosa*) blossoms.

14. Gooseberry (wild) flowers.

16. Marsh Marigold (*Caltha palustris*) flowers.

22. Cow Parsley (*Anthriscus sylvestris*) blossoms.

23. Cuckoo heard.

26. Ground Ivy and Wood Sorrel flower.

Proceedings of the Society.

FOURTH WINTER SESSION—1868-1869.

THIRD EVENING MEETING, TUESDAY, FEBRUARY 2.—Held, by kind permission, at the house of JOHN PARKER, Esq., jun. The Secretary read a paper, communicated by ROBERT HOLLAND, Esq., of Mobberley, "On some obscure points in Vegetable Physiology." He first spoke of the transverse markings which may be observed on the outside bark of trees, especially noticeable on the Paper Birch of North America (*Betula papyracea*). These bands take their rise in the mesophlæum; and Mr. Holland suggested that "there could not possibly be a continuity all through the intervening outer bark

to the interior of the plant. "In this respect they appear to bear some analogy to the medullary rays, which are *supposed* to convey air from the bark to the young wood, and they may be the very organs by which the medullary rays communicate with the atmosphere. They might, with great propriety, be called *mesophlœic bands*." The second point to which attention was directed, was the relationship between a graft or a bud, and the stock upon which it is worked. Although the graft grows by means of the sap supplied to it through the stock, and though the stock increases in size by the deposition of wood from the graft, the stock and the graft each retain their specific character, even to the minutest particular of colour, size, form, and qualities. Several instances which were apparently exceptions to this rule were cited, the chief of which was *Cytisus Adami*. This, which is evidently a hybrid between *C. Laburnum* and *C. purpureus*, is usually propagated by grafting on the former. It has dingy red flowers, but very frequently reverts by bud-variation to its own parents, and bears, intermixed amongst its own branches, others which produce the flowers and leaves of *C. Laburnum*, and some which produce the flowers and leaves of *C. purpureus*. . . . So far this strange plant appears to afford only a very fine example of bud-variation, but let us enquire how the hybrid was produced. In the first place, all attempts have failed to produce, by *artificial* impregnation, a hybrid between *C. Laburnum* and *C. purpureus*. But in a bed of seedling Laburnums which were grown in a garden where *C. purpureus* also grew, there were some veritable hybrids; so that it seems that in a state of nature it is possible for an occasional hybrid to occur between the two species. But the account given by M. Adam himself of the origin of the hybrid is very different and highly curious. He had grafted a bud of *C. purpureus* into a stock of *C. Laburnum*. This bud remained dormant the first year, but the year after sent up a great many branches, one of which grew much more luxuriantly than the rest. Now, this robust branch was propagated *before it had flowered*, and the young plants were sold for *C. purpureus*, which it was only rational to expect they would be; but when they came to flower, they turned out to be hybrids. Here, then, is a case in which the stock seems to have affected the graft in a most remarkable manner. But the probable explanation of the phenomenon is, that a bud of the *purpureus* graft united in some way with a bud of *Laburnum* stock, which happened to touch it; and that the hybrid was formed by the union of buds, and not from any influence the stock exercised upon the graft." After glancing at parasites in connexion with this subject, Mr. Holland spoke of the theory of morphology, and adduced many illustrations in support of it; these including instances, not merely of reversion, but of the conversion of certain parts of plants into the more complex organs. The paper, which was very interesting, was listened to throughout with great attention. The President

then gave a popular description of the polariscope and spectroscope, with exhibitions of each. The following objects were exhibited:—Dried plants, by Miss Chandler, illustrating the *Orchidaceæ*, *Primulaceæ*, *Cruciferaæ*, and *Ranunculaceæ*; specimens of Humming-birds, by the President; a cast of *Limulus giganteus* from the lithographic limestone (Upper Oölite), Eichstädt, Bavaria; etc. The microscopic portion of the evening was devoted to the inspection of polarised objects, mostly prepared by the President: amongst the most beautiful of these were the prisms contained in a section of the shell of an oyster, and the different forms of lime-crystals contained in a section of shrimp-shell, the spiral vessels of a rush, crystals of nitre, etc.

FOURTH EVENING MEETING, TUESDAY, FEBRUARY 23.—Held at the house of JOHN PARKER, Esq., at his kind invitation. T. Marshall, Esq., read a paper on "Our Water-Birds," in which the more generally known species were described from personal observation, and their habits referred to. This was followed by one from the Secretary, "On English Plant-Names," being an amplification of one read by him at the First Evening Meeting of the present session. Referring in the first place to the Christian names which have been bestowed upon plants, he instanced many which had been transferred from plants to people and places. He then glanced at the terminology of English plant-names, as -ock, -wort, -weed, -grass, -cress. Ominous names, such as "Mother-dee," "Thunner-flower," and "Bloodyman's Fingers" were noticed, as well as the traditions connected with them, which in some cases originated, in others took their origin from, the name. Many local traditions from various sources, bearing on love-affairs, were quoted, as well as others, of more serious import, which associated death or some other catastrophe with the plucking of certain flowers. The confusion of plant-names which renders their study more puzzling was attributed in a great measure to the "poetical license" in such matters of the older writers; and Tennyson's poems were cited as affording a good example of fidelity to nature in their allusions to natural objects. Scriptural plant-names were contrasted with such as are any thing but saintly in their allusions: and the paper concluded with a reference to those plants which are, by local name and tradition, associated with events in English history. After conversation on the subject of the paper, an exhibition of objects with the President's microscope took place—among them was a section of the human tongue (injected) showing the capillaries that run into the papillæ; elytra (wing-cases) of the Tiger Beetle (*Cicindela campestris*); a transverse section of a Lion's whisker; sections of fossil teeth; &c. The Secretary exhibited specimens of the Green Hellebore (*Helleborus viridis*) from Matching's Wood, West Wycombe; a collection of very ancient fossil remains, and a specimen of the Pipefish (*Syngnathus typhle*) were also on the table.

FIFTH EVENING MEETING, TUESDAY, MARCH 23.—Held, by kind permission, at the house of Mr. R. VERNON. The first paper, "On Fern Freaks," was communicated by Robert Holland, Esq., it will be found at p. 84 of the present number. Very fine specimens of *Scolopendrium multifidum* and *S. crispum* were exhibited in connection with this paper. The Rev. W. H. Painter had forwarded a paper, "On the South Staffordshire Coal-fields," which was read by the President; it was illustrated with a map and characteristic fossils; specimens of the various kinds of coal in use for domestic purposes were exhibited by Mr. R. Vernon. After some little conversation and discussion, the Secretary read a paper, forwarded by the Rev. H. Harpur Crewe, of Drayton Beauchamp, "On the Prominent-Moths of Buckinghamshire." This, which will be published in a future number, was illustrated by two collections, chiefly of Buckinghamshire specimens; one sent by the author of the paper, the other by the Rev. Canon Smith, of Marlow. The President exhibited an interesting and instructive collection of marsupial (or pouched) animals from Australia, and pointed out the fact that many of the fossils of that country were also of the marsupial type, some of them appearing most gigantic when compared with their living analogues. As an illustration of this, there was placed by the side of a recent Wombat (*Phascolomys Wombat*) casts of portions of the jaws of the *Phascolomys gigas* (Owen), the originals of which are in the British Museum. Besides the Wombat, there were specimens of the Vulpine Opossum (*Phalangista vulpina*), the Sugar (flying) Squirrel (*Petaurus Sciureus*), the Flying Mouse, (*Phalangista gliriformis*), the Longnosed Bandicoot (*Perameles nasuta*), and the Common Phascogale (*Phascogale penicillata*); also the hind foot of the Giant Kangaroo (*Macropus giganteus*). The Secretary exhibited a collection of British Ferns, and a portfolio of specimens of rare British plants: also living specimens of the Violets of the district, including *Viola odorata*, *V. hirta*, and *V. Reichenbachiana*. Fossil fish and coprolitic remains were shown by the President. The members were greatly interested in some newly-hatched Trout, in various stages of development, which were brought by Mr. Saunders. One of these, under the microscope, exhibited the arterial and venous circulation of the blood, and the connection between the arteries and veins by means of the capillaries: the action of the heart could also be clearly distinguished. The meeting, which was very largely attended, separated about 10 p.m.

Books Received.

Report of the Manchester Field Naturalists' Society for 1863.

As might be supposed, this report of one of the largest of our Field Naturalists' Societies, cannot fail to be of interest; to us it is especially

interesting, inasmuch as we received from Mr. Grindon, the indefatigable secretary, much assistance and advice as to the formation of our own more humble Society. It is instructive to compare the record of our own proceedings with that of the Manchester Naturalists; and it tends to alleviate the disappointment which we have felt at the non-attendance at our rambles, to find that a similar circumstance has to be regretted by the secretary of this large society. As an appendix to this report, two papers are given: one by Mr. Grindon, "On the Trees, Plants, and Vegetable Products (in addition to Cotton) which are specially connected with Manchester manufactures;" the other on "Rocks and Fossils," by Mr. Holland. Both are interesting; and Mr. Holland evinces, in his geological paper, the same happy method of popularising his subject, which has rendered his botanical contributions to our own pages so generally appreciated.

Quarterly Journal of the Folkestone Natural History Society; No. 2.

The printing of this number shows a marked improvement on its predecessor. The contents are varied of both general and local interest; among the former we may note the papers on "Buttercups," "The Fertilisation of Orchids," and "Winter Work;" among the latter the two pages on "Local Museums," and the "Notes and Queries."

Hardwicke's Science-Gossip, Nos. 49, 50, 51.

We have so constantly recommended this to our readers, that little remains for us to say about it, except cordially to endorse our previously expressed opinion. Our readers will recognise the paper on "English Plant-Names," as being the substance of one read at our first Evening Meeting. It is difficult to select any one paper for special praise; but those on "Buds as Objects for Winter study," "Myriapods," "Poppy Seeds," and "Sea Anemones," are among the most valuable contributions. The "Correspondence" always an attractive feature in this magazine, is, as usual, varied and interesting.

The Naturalists' Note-Book, Nos. 25, 26, 27.

We note with pleasure a great improvement in the contents of this periodical. Greater prominence is given to original papers, and, we think, wisely; but we are sorry to see that the "Short Notes" seem in danger of being "crowded out." We would venture too, to suggest that the correspondence upon such vexed questions as "The Reason of Animals," and "Do Insects feel Pain?" should be controlled within more reasonable limits, especially when personalities are introduced. The papers "On Insect Medicine and Folk-lore," "On the British *Geometra*," and "The Song Thrush, and Thrush Snares," are among the most interesting of the contents of the three numbers before us.

The Prominent Moths of Buckinghamshire.*

By the Rev. H. HARPUR-CREWE.

THIS most beautiful family of moths may well be styled the *crème de la crème* of the British Lepidoptera. There is an indescribable softness and beauty of colouring in the caterpillar, and a refined loveliness in the perfect insects; they are, with few exceptions, so rare and difficult to obtain that they may most classically be called the aristocracy of the Scale-winged Moths.

The name of Prominent Moths is, I may remark, given to this family from the very sharp and prominent ridge which the edges of the anterior wings of the perfect insect present as it sits at rest; and more especially from the fact that in most of the species which form this group there is on the lower edge of each anterior wing a small pyramidal appendage which, when the insect sits at rest with closed roof-like wings, forms a very remarkable prominence towards the centre of the ridge. Our own county of Buckingham is singularly rich in this very beautiful group of moths. With two or three exceptions they are all found in the shire, and that, too, in our own immediate neighbourhood. No less than fifteen species have been taken in Buckinghamshire; I have taken thirteen myself. I propose to take them in order and tell you how, and where, and when to take them.

1. *Stauropus Fagi* (the Lobster Moth).—This insect is one of the largest in the group, and also one of the rarest. It derives its name from its very singular caterpillar, a most remarkable creature, of a reddish-brown colour, with numerous long thin sprawling legs, in appearance strongly resembling the crustacean whose name it bears. It feeds, as far as my own experience goes, exclusively on the beech, in August and September. I have several times beaten it into an umbrella from the overhanging

* Read before the Society at the Sixth Evening Meeting of the Fourth Winter Session, April 27th, 1869.

boughs of beech trees in the rides of the woods at Buckland Common and St. Leonards. It is difficult to rear, as it often refuses to feed in confinement. The perfect insect, which is pale reddish-brown, clouded with a darker colour, appears in May and June, and may be found by searching the stems of the large detached beech trees. It has been taken several times at Velvet Lawn. The pupa, in common with that of all the rest of this group, is inclosed in a strong earthen cocoon just below the surface of the ground at the foot of the tree on which the larva has fed.

2. *Petasia cassinea* (the Sprawler Moth).—If you have chanced to look up at the gas-lamps on the outskirts of the town on a warm, dark, still night in October, you may probably have observed some largish moths dashing wildly about them, or seated at rest on their sides; and if you have taken the trouble to catch one of them, the chances are ten to one that you have captured the pretty soft-looking pale brown moth streaked with black, which, why or wherefore I know not, goes by the name of the Sprawler. The caterpillar is a beautiful glossy yellowish-green, striped with white. It feeds on various trees in May, *e. g.*, beech, hazel, lime, and oak; and is particularly partial to the wych elm, from which tree I have beaten it in some numbers in Suffolk. I used to spread a large sheet under the tree and beat the boughs with a long pole. I have taken the perfect insect at lamp-light when sitting reading in my room at Drayton-Beauchamp.

3. *Gluphisia crenata* (the Dusky Marbled-Brown Moth).—This insect is so rare that I believe only four have ever been taken in Great Britain; one of these was beaten, in the caterpillar state, from a poplar tree at Halton a few years since by my excellent friend the Rev. Joseph Greene, in whose collection I have frequently seen the perfect insect. There is little doubt that the insect occurs all over the county, and only requires to be looked for to be found. The moth is a dull-coloured insect of little beauty. The larva is pale green, with a yellow line on each side, and some conspicuous rusty-red spots on the back.

4. *Ptilophora plumigera* (the Plumed Prominent).—The males

of all the Prominent family are prettily feathered and plumed, but the plumes of this species are so singularly large and beautiful that it has been styled, *par excellence*, the Plumed Prominent. When almost all nature is asleep in the gloomy month of November this beautiful and delicate moth is busy and alive. It generally makes its appearance with Guy Fawkes, about Nov. 5. It is of a uniform reddish-brown; the wings semi-transparent and indistinctly marked with yellowish streaks. It lays its eggs, which are of the same colour as the bark, on the twigs of the maple; and in May and June the caterpillar, which is long and slender, whitish or bluish-green with white lines on the back, may be beaten full fed from the maple bushes at the edges of the woods. I have frequently taken it in the woods at Drayton-Beauchamp. It is uncertain in its appearance.

5. *Ptilophora palpina* (the Pale Prominent).—This pale ashy-grey insect proclaims its own name. It is one of the common species of the family. The colour of its wings may best be described as oak-wainscoat-brown. It appears in June and July, and in the two following months its curious powdery greenish-white caterpillar may be found feeding on various species of willow and poplar, especially the aspen and the abele. It has a rough wrinkled back and a conspicuous yellow stripe on the sides. The little white conspicuous eggs of this moth may be found on the backs of the poplar leaves in July and August, and the little larvæ are easily reared. It is found throughout the county.

6. *Notodonta Camelina* (the Coxcomb Prominent).—This moth, which from its red colour and large wing protuberance, has been named the Coxcomb, is the only one of the Prominents which can really be called common. It is extremely abundant in the caterpillar state in the months of August, September, and October, and may be beaten from ash, beech, hazel, lime, elm, maple, willow, apple, and birch. It is whitish—or bluish-green, with two conspicuous red warts near the tail, by which it may always be distinguished from the rest of the genus. The moth is mostly red with darker shadings. It appears from May to September, and occurs everywhere.

7. *Notodonta cucullina* (the Maple Prominent).—This rare and beautiful Prominent may be said to have its head-quarters in Buckinghamshire. I once took two larvæ in Suffolk, and a friend during many years collecting took four of the perfect insect in the same county. I once beat two larvæ from a maple bush in Herts. It has been taken a few times in Norfolk and Kent, but until about sixteen years ago it was one of the very rarest of our British Lepidoptera, and lucky was the collector who possessed a specimen in his cabinet. It so happened that one midsummer day about that time I was entomologising in a wood in this parish (Drayton-Beauchamp), when at the back of some maple leaves I found a number of delicate white eggs, which I at once saw to be the eggs of a species of Prominent Moth closely allied to the Coxcomb, but undoubtedly distinct. I watched these eggs with the greatest care: in due time the little larvæ hatched, and when full fed I found to my intense delight that I had reared the caterpillar of that beautiful rarity—the Maple Prominent. During the same season my friend Mr. Greene took a number of the larvæ in the woods at Halton, and he and I subsequently took a large number in the woods in this neighbourhood. The Rev. Bernard Smith has also taken it plentifully in the neighbourhood of Marlow, and there is little doubt that it occurs in most parts of the county. The moth appears about midsummer; the larva—which is pale whitish-green, slightly hairy, with a hump in the middle of the back, and always rests with its tail in the air—feeds exclusively on the maple, and prefers those bushes which are in the middle of the beech woods. It is full fed in September. It feeds on the underside of the leaf and may easily be seen by turning the branches back one by one, or it may be beaten into an umbrella. The moth in shape and form most closely resembles the preceding species, the Coxcomb, but differs widely in the colouring of the upper wings, which are conspicuously variegated with buff and white.

8. *Notodonta Carmelita* (the Carmelite Prominent).—This beautiful moth, one of the rarest of its class, has for many years past been taken sparingly in Black Park, a wood belonging to

Sir Robert Bateson Honey, Bart., of Langley Park. It may at once be distinguished from the rest of its family by the almost uniform purplish-red colour of the wings, relieved only by a conspicuous white or yellowish spot on the upper edge of the anterior pair. The caterpillar, which is bright apple-green marked with yellow on the back, and a white yellow and pink stripe on the sides, feeds exclusively on the birch in July; and on the trunks of this tree the moth may be found sitting in May.

9. *Notodonta dictæa* (the Swallow Prominent). — This moth and its neighbour the "Lesser Swallow" may at once be distinguished from all the rest of their fellows by their long, slender shape, when at rest, much resembling that of a swallow with its wings closed, and by their uniform whitish-grey colour, with a conspicuous dark stripe at the base and tip of the anterior wings. In the present species these stripes are chocolate brown. If any one will take the trouble to turn up a number of branches of the black, Italian, or Lombardy poplar in August and September, the chances are that he will find various small very white eggs, or a very long, thin, glossy, whitish-green caterpillar with a yellow stripe on the sides and a red hump at the tail. These are the eggs and the larva of the Swallow Prominent moth. It feeds upon all kinds of poplar, and sometimes, upon sallow and willow. There is a variety of the caterpillar which when full fed is of a uniform pale brown. The moth appears at the end of May and in June and July.

10. *Notodonta dictæoides* (the Lesser Swallow Prominent.) This moth in form and marking almost precisely resembles the preceding species, but the dark lines in the upper wings are always a beautiful rich *purplish*-brown, whilst the intervening portions of the wing are much whiter than in *dictæa*. The larva too, is totally different, being of a uniform deep purple with a conspicuous yellow stripe on the side. It feeds invariably on the birch and is full fed in September and October. I have taken both this and the preceding species in this parish (Drayton-Beauchamp) and believe that, though they are nowhere common, they occur wherever poplar and birch trees are to be found.

11. *Notodonta dromedarius* (the Iron-coloured or Dromedary Prominent), the latter appellation being derived from the wonderfully humpy appearance of the caterpillar,—resembles the Carmelite Prominent in colour, but is of a much darker shade. The upper wings (the rusty brown tint of which varies a good deal in intensity) are more or less marbled with yellow. The caterpillar, which is one of the most singular looking creatures in the insect creation, is bright yellowish-green, more or less saddled on the back with purplish-brown. It has no less than five humps on its back, and rests like the larva of the Maple Prominent with its tail in the air. It feeds in September on birch and alder, and occasionally on hazel. I have several times taken it in this parish. The moth appears in May, June, and July.

12. *Notodonta ziczac* (the Pebble Prominent) is at once distinguished by the conspicuous markings at the tip of the anterior wings, resembling the polished eye of an onyx or some other pebble—whence its name. It is not a very uncommon species. Its singular brown and purple larva resembles the larva of *dromedarius* in form but has two humps less. It feeds upon all kinds of poplar and willow in September and October. The moth appears in May and June. It occurs all over the county.

13. *Notodonta trepida* (the Great Prominent).—The larva of this magnificent moth, the king of the Prominents, I have several times beaten from oak trees in this neighbourhood in July. It is as gorgeously bright as the moth is softly beautiful. The ground colour is the brightest apple-green, with yellow lines on the back and large yellow and red stripes on the side. I know nothing more exciting to an entomologist when he has spread his sheet under the spreading boughs of a large oak and given one of the branches a sharp tap with his pole, than to hear a loud thud on the sheet, and to see a large fat larva of *trepida* lying sprawling on its surface. This caterpillar feeds exclusively on the oak and is full fed in July. The moth, which appears in May, has the upper wings of a uniform soft dusty green, more or less suffused with saffron and marbled with dark olive. It may

be found sitting not far from the ground on the trunks of large oaks. When touched it moves its wings in a peculiar tremulous manner, whence its Latin name *trepida*. The Essex and Suffolk collectors have a curious and ingenious way of catching the males of this insect. When they breed a female moth they take her out into the vicinity of the woods before dark, and fetter her by a horse-hair or piece of fine silk (tied round the junction of the thorax and abdomen) to the stem of a large oak. As soon as it is dark, various male suitors make their appearance, anxious to woo and win. Having secured a specimen or two for his cabinet the collector permits the wedding to take place, and is thus sure of a set of fertile eggs to breed from for the following year.

14. *Notodonta chaonia* (the Lunar Marbled Brown).—This pretty Prominent may, with the next and last species, easily be distinguished from its compeers by the conspicuous, broad, whitish bar in the centre of the soft ashy-brown upper wings. It is altogether a paler and brighter looking insect than the next species *N. dodonæa*, and appears a month earlier. I have several times beaten the larva, which is full fed at the end of June or beginning of July, from tall oaks in this neighbourhood. It is a uniform glaucous sickly green, with two yellow stripes on the back and one on the sides; and feeds exclusively on oak. The moth appears in May.

14. *Notodonta dodonæa* (the Marbled Brown).—This pretty little Prominent, altogether a smaller, narrower, and darker insect than the preceding species, has its upper wings conspicuously marbled and bound with white, thence its name. It appears a month later than its congener *chaonia*. I once beat the larva from oak, on which it exclusively feeds, in this neighbourhood; and Mr. Greene met with it sparingly at Halton. It is exceedingly like the caterpillar of the Carmelite Prominent in shape and colour, yellowish-green, and wrinkled with two slender yellow dotted lines on the back and a yellow and pink stripe on the side. It is full fed in August.

I can assure my readers that if these few disjointed remarks of

mine should induce them to employ their spare moments in trying, during the next few years, to breed and make a collection of the Buckinghamshire Prominents, they will find it a source of unflagging interest and unceasing delight. I have now almost given up entomology for my flower garden but I reckon amongst the happiest days of my life those in which I used to shoulder my sheet and pole to thrash the oaks in the sunny glades for the gorgeous larva of the regal *trepida*; or hunt the maple bushes in the deeper shades for the smaller but no less rare and beautiful caterpillar of *cucullina*.

The Birds of Cookham and the Neighbourhood.

Continued from page 84.

Before commencing another page of this paper on the ornithology of our neighbourhood I must express my heartfelt regret that it will be continued without the coadjutation of my friend Mr. Briggs, who was suddenly removed from amongst us on the 5th of April last. For many years Mr. Briggs was my firm supporter and ally in the pursuit of ornithology, and I was in the habit of taking down to him the MS. of the present paper to get his additional notes before sending it to press. I shall endeavour, of course, to remember all that he told me respecting the species hereafter to be treated of, but I had hoped to have made our journal the receptacle of many of his interesting notes and experiences, the record of which, as unfortunately with so many naturalists, dies with him.

Subfam. SITTINÆ.

Genus. SITTA.

Sitta cæsia.

The Common Nuthatch.

The Scandinavian Nuthatch, the true *Sitta Europæa* of Linnæus differs from our bird in having the under parts white, without a ring of the bright rufous colouring so conspicuous in the

English species. The true *Sitta Europæa* seems to be entirely confined to the Scandinavian Peninsula, while the *S. cæsia* is not confined to Great Britain, but is also the Nuthatch of France and Central Europe. The notion that the Nuthatch was allied to the Woodpeckers which is still to be found in some Natural History publications, is most certainly erroneous; as the species is decidedly Passerine, whereas the Woodpeckers belong to the *Picariæ*, an entirely different order of birds. The real position of the genus *Sitta* I believe to be near the Tits (*Paridæ*), forming perhaps a link between these birds and the Creepers (*Certhia*). Like both of these, the Nuthatch builds in the hole of a tree, while everyone knows the general similarity of its eggs to those of the birds above-mentioned.

No sort of climbing comes amiss to the present species and he may be seen to run up or down a tree, along or underneath the branches, while his presence is often first indicated by the rasping noise made by the bark as he detaches it from the tree. If by vigorous tapping the Nuthatch cannot induce the insects to come out of their hiding places, he soon makes short work of the matter, by inserting his wedge-shaped bill, admirably adapted for the purpose, under the bark, and tearing off a large piece. He is particularly fond of frequenting oak-trees, and I have often seen two or three on this kind of tree at once. When engaged in hunting for insects, the Nuthatch utters a sharp twittering noise which is by no means inharmonious.

Fam. CETHIDÆ.

Genus CETHIA.

Certhia familiaris.

The Common Creeper.

In favourite localities the Tree-creeper is common in the neighbourhood of Cookham, but is rather difficult of observation. Generally the bird first makes us aware of its proximity by its note, which is a prolonged hissing sort of whistle, but even then it is a hard matter to discover the bird, as its small size and quick action render it no easy matter to discover. Sir Victor Brooke in *Land and Water* for May 22nd, 1869, states that he "was greatly astonished in the Riviera, North

Italy, to hear the Tree-creeper continually singing. His song, like his call note, is something like that of the Golden-crested *Regulus*. I could not believe my ears when I first heard the song coming from the little fellow, as he crept up the side of an old olive, apparently as intent as possible on an examination of its bark. He sings incessantly, and his song once heard cannot be mistaken. It is a great deal stronger than the Golden-crest's (*Regulus cristatus*) or the Fire-crest's (*R. ignicapillus*) The Tree-creeper singing in Italy and never uttering a sound here is very curious. I shot one and examined it carefully, but did not find the slightest difference between it and the birds of this country."

This last statement rather surprises me, as I have found considerable differences between the continental Tree-creeper and the one found in England, and I am only waiting for additional specimens to enable me to prove that they are distinct species, as in the case of the Long-tailed Tits.

Fam. ALAUDIDÆ.

Genus ALAUDA.

Alauda arborea.

The Woodlark.

This species is of very rare occurrence at Cookham. Great quantities of Woodlarks are annually sent to London from Wales, as I learn from Mr. Davey, of Kentish Town.

Alauda arvensis.

The Sky-lark.

Abundant all the year round, but receiving considerable addition to their numbers in the autumn, when they assemble in flocks and do not separate until the spring. Even in the breeding season, larks may be seen in the early morning, feeding in company on the ploughed fields. The hind toe of this species is always long, and is sometimes found enormously developed.

Fam. FRINGILLIDÆ.

Sub-fam. EMBERIZINÆ.

Genus PLECTROPHANES.

Plectrophanes nivalis.

The Snow Bunting.

I was delighted to find a short time ago in Mr. Joseph Ford's

possession, a Snow Bunting in winter plumage, which was shot at Cookham some years ago and preserved by him. The specimen is now in my collection.

Genus CYNCHRAMUS.

Cynchramus miliarius. The Common Bunting.

I cannot justify the epithet of "common" with respect to this bird at Cookham, for it is decidedly rare, being only found in a few localities. I have tried several times to get one lately without success, nor does my collection contain a Cookham specimen. It used to be by no means rare in the fields by the side of the railway leading to Cock Marsh, and was often to be seen sitting on the hedge or the palings uttering its note, which is wonderfully like that of the Yellow-Ammer, but without the characteristic ending to the song of that better-known bird. The present species is also called by the local names of Corn Bunting or Bunting Lark. I found the Bunting by no means rare in Huntingdonshire, and I collected several there, none of which now remain in my hands; but in the South of England it is apparently far less common, the only specimen recently obtained being a male caught at Hampstead in April last.

Genus EMBERIZA.

Emberiza citrinella. The Yellow-Ammer.

This well-known bird, also called the "Writing Lark" from the peculiarity of the marking of the eggs, is common in the neighbourhood.

Emberiza hortulana. The Ortolan Bunting.

In Mr. Clark-Kennedy's *Birds of Berks.* the present species is inserted on the authority of three specimens having been shot at Cookham some years ago. Mr. Briggs informed me of the circumstance.

Emberiza cirrus. The Cirl Bunting.

This bird is always associated in my mind with some of my pleasantest recollections of Mr. Briggs, as he was never tired of telling me the story of its discovery by him at Cookham. The first specimen obtained was at Formosa on some very tall elms and, as he was walking near these in company with his brother,

the latter drew his attention to the note of a bird on one of the topmost branches, remarking that he did not believe the bird could be a Yellow-Ammer. Briggs accordingly came the next morning with his gun, and shot the bird ; but having procured it he was at a loss to tell what it was, and described it to Mr. Gould as a hybrid between a Yellow-Ammer and Reed Bunting. The latter gentleman, however, told him there could not be such a thing, and shortly after Briggs found out the species from seeing one of Mr. Gould's figures in the *Birds of Great Britain*. After that he took great interest in the Cirl Bunting and during his residence at Formosa he succeeded in procuring several specimens, one of which, a fine male now graces my private collection. It always surprised me how Briggs could distinguish even at a considerable distance the note of the Cirl Bunting from that of a Yellow-Ammer, but he was always right, and after having triumphantly proved the fact, he would recount how he had puzzled persons by declaring the bird they heard not to be a Yellow-Ammer, and then proving the fact in spite of their scepticism, by shooting the bird in the act of singing. The Cirl Buntings obtained at Cookham are very fine, as Mr. Gould remarks (*l.c.*). I sometimes get a specimen from Hampstead, and near Reigate, they are by no means uncommon.

Emberiza schoeniclus. The Reed Bunting.

A common bird, associating in flocks in the winter.

Sub-fam. FRINGILLINÆ.

Genus FRINGILLA.

Fringilla cœlebs.

The Chaffinch.

A common resident, breeding plentifully in the neighbourhood. I have seen a large series of eggs collected at Hampstead this year, and exhibiting every variation in the colour of the eggs from nearly pure white to deep blue or chocolate brown spotted.

Fringilla montifringilla.

The Brambling.

The Brambling is extremely numerous in winter, and large flocks may be seen flying in the early morning from Cliefden Woods to the beech trees in Quarry Wood near Marlow, and returning again in the evening. As they generally fly high in

the air it is by no means easy to shoot them, and few fall to the gun: but folding-nets are more destructive, and large numbers of these pretty birds are caught near London every year. The first Brambling was obtained at Hampstead in 1868 on the 1st of October, a very early date for their arrival in this country.

Genus PASSER.

Passer domesticus. The Common Sparrow.

Passer montanus. The Tree Sparrow.

This bird is not common at Cookham, and Mr. Briggs never obtained a specimen till 1865, although, doubtless, he had previously overlooked the species. In the autumn of that year he went to Cambridgeshire, where he found the bird common and shot several specimens. On placing his foot outside his cottage door on the first morning of his return, the first thing he heard was the note of a Tree-sparrow, with which he had become familiar during his recent visit to Cambridgeshire, and he soon after shot the bird in an ash tree. This specimen is now in my collection. On the 10th of last November I shot a second out of a flock of birds in a stubble-field, killing two Yellow-Ammers at the same discharge; and in January last a third specimen was shot near White Place. Doubtless the Tree-sparrow has often been overlooked or confounded with the common species; still it cannot be called a common bird in the neighbourhood of Cookham.

Genus Ligurinus.

Ligurinus chloris. The Greenfinch.

Very common at Cookham and in the neighbourhood.

“Science cannot, at present, afford to throw hard words at provincialisms. Too often, in her nomenclature, has she failed to interpret nature; too often only given us the skeleton leaf instead of the flower. A long list of provincialisms might be given, where by a word a whole train of associations is aroused, and the close relationship of all things shown. . . . Many of our most expressive terms are fast dying out. . . . As schools are built, and schoolmasters increase, so will the old-world words perish in the struggle with the new.”—*Cornhill Magazine*, July, 1865.

Flora of Buckinghamshire.

BY JAMES BRITTEN.

With a view of keeping before the public my intention of publishing at some future period a complete Flora of Buckinghamshire, and of at the same time recording the progress made and assistance received since my former list was printed, I have prepared the following catalogue, which may be taken as a fair estimate of our knowledge of the botany of the county at the present time.

Five names which appeared in my earlier list are here omitted. *Ranunculus heterophyllus* and *Fumaria Boræi*, for which I am responsible, I withdraw for the present, as, although I am not certain they do not occur with us, they require further investigation. *Ranunculus Baudotii* was originally recorded with a query (see *Phytologist*, vi. 528, N.S.), and is probably not a Bucks plant. *Pyrola media*, of which I have before expressed my doubts, was certainly entered by mistake in *Raii Synopsis*, ed. iii. in the *New Botanists' Guide* and elsewhere, *P. minor* being the plant intended. I have examined living and dried specimens of *P. media* from the north of England, and compared them with specimens from most of the Buckinghamshire localities recorded for the plant, and find the latter to be in every case *P. minor*. A similar comparison of a dried Buckinghamshire specimen labelled *Orchis fusca (purpurea)*, with those in the British herbarium at the British Museum, and living plants from Kent, convinces me that this, too, was an error. The list might probably be yet further reduced by the withdrawal of many plants, which were either erroneously recorded or are now extinct, such as *Sisymbrium Irio*, *Viola canina*, *Dianthus deltoïdes*, *Erodium moschatum*, *Lathyrus Aphaca*, *Sanguisorba officinalis*, *Comarum palustre*, *Mespilus germanica*, *Tordylium maximum*, *Seseli Libanotis* (Hudson's station, "inter S. Alban's et Stoney Stratford" may be in Bucks), *Filago*

gallica, *Crepis fœtida*, *Xanthium Strumarium*, *Andromeda polifolia*, *Melampyrum cristatum*, *Mentha rotundifolia*, *Verbascum Blattaria*, *Utricularia intermedia* (doubtfully recorded), *Thesium humifusum*, *Myrica Gale*, *Habenaria viridis*, *Carex Pseudo-cyperus*, *Asplenium fontanum*, *Botrychium Lunaria*. Most of these are not known to have been found for the last sixty years, and their re-discovery is much to be desired. It is possible that some others included without any mark of suspicion may be erroneously inserted, as as many of the localities given by the older writers require confirmation.

The river Thame forms a natural division between the north and south of the county; my present knowledge does not justify me in adopting a further division into districts. I have endeavoured to show which plants are peculiar to either part of the county, and which are common to both. To the former the initial N or S is affixed, according as they are found in North or South Bucks; and the absence of either initial indicates that they have been recorded for both divisions. The greater number, however, of those to which S is affixed are doubtless to be found in the north of the county; but I have no authority for their occurrence there.

The whole list is arranged in accordance with Professor Babington's Manual of British Botany, ed. vi.; and varieties given in that work are here included as such. When only one form of a species is known to occur it is printed thus—*Mentha pratensis b rubra*; when both species and variety are recorded they are separated by a comma. The total number of species is 808, of varieties 30. Plants undoubtedly introduced are *italicised*.

In conclusion, I would sincerely thank those who have helped me hitherto, hoping that they will continue their assistance, and that many more may be induced to follow their good example.

BUCKINGHAMSHIRE PLANTS—1869.

RANUNCULACEÆ.—*Clematis Vitalba*. *Thalictrum flavum*. *Anemone nemorosa*, *apennina* S. *Adonis autumnalis* S. *Myosurus minimus*. *Ranunculus trichophyllus*, *Drouetii* S, *floribundus*,

peltatus S, circinatus, fluitans, hederaceus, sceleratus, Flammula, Lingua S, Ficaria, auricomus S. acris, repens, bulbosus, arvensis, parviflorus S. Caltha palustris. Helleborus viridis, *fetidus* S. Aquilegia vulgaris S. *Delphinium Ajacis*. *Aconitum Napellus* S.

BERBERIDACEÆ.—*Berberis vulgaris*.

NYMPHEACEÆ.—*Nymphaea alba*. *Nuphar lutea*.

PAPAVERACEÆ.—*Papaver Argemone* S, *Rhœas*, *dubium*, *Lecoqii* S, *somniferum* S. *Chelidonium majus*.

FUMARIACEÆ.—*Corydalis lutea*. *Fumaria officinalis*.

CRUCIFERÆ.—*Cheiranthus Cheiri* S. *Nasturtium officinale*, *b* *siifolium*, *sylvestre* S, *palustre*. *Barbarea vulgaris*. *Turritis glabra* S. *Arabis hirsuta* S. *Cardamine sylvatica* S, *hirsuta* S, *pratensis*, *amara* S. *Dentaria bulbifera* S. *Hesperis matronalis*. *Sisymbrium officinale*, *Iris* S, *thalianum* S. *Alliaria officinalis*. *Erysimum cheiranthoides*, S. *Brassica campestris* S, *b* *Rapa* S, *Napus*. *Sinapis nigra* S, *arvensis*, *alba* S. *Diplotaxis muralis* S. *Alyssum calycinum* S. *Draba verna*. *Armoracia rusticana*, *amphibia* S. *Camelina fetida* S. *Thlaspi arvense*. *Teesdalia nudicaulis* S. *Iberis amara* S. *Lepidium Draba* S, *campestre* S. *Capsella Bursa-pastoris*. *Senebiera Coronopus*. *Isatis tinctoria* S. *Raphanus Raphanistrum*.

RESEDACEÆ.—*Reseda lutea*, *Luteola*.

CISTACEÆ.—*Helianthemum vulgare*.

VIOLACEÆ.—*Viola odorata*, *hirta*, *Reichenbachiana*, *Riviniana*, *canina* S, *tricolor*, *b* *arvensis*.

DROSERACEÆ.—*Drosera rotundifolia* S, *intermedia* S.

POLYGALACEÆ.—*Polygala vulgaris*, *b* *depressa* S.

CARYOPHYLLACEÆ.—*Dianthus Armeria* S, *deltoïdes* S. *Saponaria officinalis* S. *Silene anglica* S, *inflata*, *noctiflora* S. *Lychnis Flos-cuculi*, *vespertina*, *diurna*, *Githago*. *Sagina procumbens*, *apetala*, *subulata* S, *nodosa* S. *Alsine tenuifolia* S. *Arenaria trinervis* S, *serpyllifolia*, *leptoclados* S. *Stellaria nemorum* S, *media*, *c* *neglecta* S, *d* *umbrosa* S, *Holostea*, *glaucia* S, *graminea*, *uliginosa*. *Malachium aquaticum*. *Cerastium glomeratum*, *triviale*, *semidecandrum*, *arvense* S. *Moenchia erecta* S. *Lepigonum rubrum* S. *Spergula arvensis*. *Scleranthus annuus* S.

MALVACEÆ.—*Malva moschata*, *sylvestris*, *rotundifolia*.

TILIACEÆ.—*Tilia europæa*, *parvifolia* S, *grandifolia* S.

HYPERICACEÆ.—*Hypericum calycinum* S, *Androsæmum* S, *tetrapterum*, *perforatum*, *humifusum*, *hirsutum*, *montanum* S, *pulchrum*, *elodes* S.

ACEBACEÆ.—*Acer campestre*, *Pseudo-platanus*.

GERANIACEÆ.—*Geranium phæum* S, *pratense*, *sanguineum* S, *pyrenaicum* S, *pusillum*, *dissectum*, *columbinum*, *molle*, *lucidum* S, *Robertianum*. *Erodium cicutarium* S, *moschatum* S.

BALSAMINACEÆ.—*Impatiens fulva* S.

OXALIDACEÆ.—*Oxalis Acetosella*, *corniculata* S, *stricta* S.

LINACEÆ.—*Linum usitatissimum* S, *catharticum*. *Radiola millegrana* S.

CELASTRACEÆ.—*Euonymus europæus*.

RHAMNACEÆ.—*Rhamnus catharticus*, *Frangula* S.

LEGUMINOSÆ.—*Ulex europæus*, *nanus* S. *Genista tinctoria* S, *anglica* S. *Sarothamnus scoparius* S. *Ononis arvensis* S, *campestris*. *Medicago sativa*, *lupulina*. *Melilotus officinalis*, *alba* S. *Trifolium pratense*, *medium* S, *arvense* S, *subterraneum* S, *repens*, *hybridum* S, *fragiferum*, *procumbens*, *minus* S, *filiforme* S. *Lotus corniculatus*, *d* *tenuis* S, *major* S. *Anthyllis vulneraria* S. *Astragalus glycyphyllos* S. *Vicia hirsuta*, *tetrasperma*, *gracilis* S, *sylvatica* S, *Cracca*, *sepium*, *sativa*, *b* *angustifolia* S, *lathyroides* S. *Lathyrus Aphaca* S, *Nissolia* N, *pratensis*, *sylvestris*, *macrorrhizus* S. *Ornithopus perpusillus* S. *Hippocrepis comosa*. *Onobrychis sativa*.

To be continued.

Proceedings of the Society.

FOURTH WINTER SESSION, 1868—69.

SIXTH EVENING MEETING, [TUESDAY, APRIL 27.—Held at the house of the President, the Rev. T. H. Browne, by his kind invitation. A brief but remarkably suggestive, paper, on the progress of geology, and on one or two of the theories of modern geologists, was read by

John Parker, Esq., Jun. ; and this gave rise to so much conversation, and elicited so much information from the President, that another paper which had been communicated was postponed until a future meeting. The President exhibited specimens of bones and antlers of an extinct deer found in gravel while digging the new docks at Bristol ; a map, showing the locality in which they were found, was produced ; and a brief account of their discovery given. The objects exhibited were, as usual, numerous ; they included British and foreign Bats ; some living Crabs ; Hawthorn in blossom, and Herb Paris (*Paris quadrifolia*) brought by the Secretary ; Butterflies and Moths from the West of Africa, presented by W. C. Small, Esq. ; and casts of the femur, tibia, and metacarpel bone of the *Dinornis maximus*, with which were contrasted similar bones of the Ostrich and Emu. The microscope was, as usual, a great source of attraction ; amongst the objects exhibited were a parasite of the Pheasant, foraminifera from the Mediterranean, the spiral vessels of a rush, &c.

THE ANNUAL CONVERSAZIONE with which the Winter Session terminates was held on Tuesday, May 4, in the Townhall, and was, if possible, more successful than those of former years. The exhibition of objects, although rigidly confined to such as were connected with some branch of natural history, was remarkably good : it embraced all the most noteworthy of those exhibited at the several winter meetings, besides many additions, of which the following deserve special mention :—A collection of wood sections, and another of fir-cones, lent by Leo. H. Grindon, Esq., of Manchester ; objects from the Holy Land, by the Rev. C. W. B. Clarke ; excavations from the Suez Canal, by H. Groome, Esq. ; vases of eels, mussels, cray fish, etc., from the Thames ; and many more. The splendid collection of Kingfishers, brought by R. B. Sharpe, Esq., in illustration of his paper demands special mention ; it included not only rare, but unique, specimens, and is unsurpassed by any in Europe. Besides the birds themselves, Mr. Sharpe exhibited a collection of drawings, being the original from which the plates in his monograph of the *Alcedinide* are taken. A bank of wild flowers, arranged with great taste by the Misses Giles, attracted much attention ; besides most of the more interesting plants of the Wycombe district, rarities from different parts of the country including *Saxifraga oppositifolia*, from the Clova mountains ; the true Oxlip (*Primula elatior*, Jacq.) from Saffron Walden, Essex ; the Mountain Pansy (*Viola lutea*), the Globe-flower (*Trollius europæus*), the Asarabacca (*Asarum europæum*), the Spring Cinquefoil (*Potentilla verna*), and the lovely Birdseye Primrose (*Primula farinosa*), from Northallerton, Yorkshire ; the Wood Forgetmenot (*Myosotis sylvatica*) from Mobberley, Cheshire : and the Fritillary (*Fritillaria meleagris*) from Ford, near Aylesbury. The above-named ladies exhibited several sets of drawings of British plants, which were greatly and deservedly admired for

their artistic excellence as well as for their fidelity to nature. Miss Chandler's herbarium, the President's collections of bones, insects, fossils, and shells, and many more objects, filled every available space; indeed, it was difficult to find room for all the articles sent. The Society is under great obligation to Mr. Miles, who, with the permission of Lord Carrington, gave a life and brilliancy to the scene by his tasteful arrangement of some magnificent azaleas, caladiums, ferns, &c.

The members and friends assembled about 7 p.m.; and at 7.30 the President took the chair, supported by Mr. Sharpe, the Secretary, Members of the Committee, and others, and delivered his

ANNUAL ADDRESS.

Upon looking back on the past year of the Society's operations, there is but little which calls for special observation. Our winter meetings have been well attended. Upon the whole they have been very interesting, and in many cases they have been highly instructive. The subjects that have engaged our attention have been very varied. The conversations that have followed the subjects introduced have been very satisfactory. There is reason to think that these discussions have especially awakened the interest of those whose attention had not been directed towards scientific subjects. May we not hope that this first dawn of interest in the mind, like the dawn of daylight in the outer world, will increase and increase till it has matured itself in advanced attainments and enjoyments. While attending to the many communications that have engaged the attention of the members, we seem to have dived into the ocean, to have delved into the earth, to have sought an acquaintance with the beasts of the field, the fowls of the air, and the fishes of the sea. We have read the "sermons in stones, books in the running brooks," and have tried to get good out of everything. I regret to say that our excursions during the summer have not been so numerous or so well attended as could have been desired. Perhaps many legitimate causes may have prevented the members from engaging in this most instructive mode of studying nature in its native state. Still we regret it. There is more to be learnt in the fields than in the lecture room, in the home of creation than by bringing creation into our own home. The examination or discussion of collected objects may be important—may interest and interest and instruct the mind, and may awaken within us enlarged apprehensions of the Creator's wisdom and goodness. But modes of life, growth, and action, can be learnt nowhere so well as in the native haunts of animal and vegetable existence. "A well-set cabinet of British bees, is worth going a pilgrimage to see;" so writes one of our most distinguished Hymenopterists. How much more delightful and soul-thrilling to see these bees flitting about

from flower to flower, carrying on the work of floral fructification, gathering sweet food for their unborn offspring, sometimes with mysterious movements filling the air with melody; thus whilst these sweet sounds blend with other sounds, the soft "music through creation stealing," awakens holy and happy emotions in the soul, till every chord of our inmost nature vibrates in unison with harmonies that swell around; and they and we join in the song of universal joy, "All Thy works praise Thee, O Lord." I have often envied the individual who has seen the large Copper Butterfly in its native wilds. Beautiful it is, and brilliant when laid out in death. Few now possess this extinct species of the British Lepidoptera. But the naturalist was favoured above many who saw its transcendent beauty, its brighter brilliancy, as it once floated in the sunshine of the summer day. Those who have seen it will not easily forget that gorgeously resplendent wing that trembled with iridescent light like the mingled flashes of tiny diamonds. But we would not invite your attention to natural history merely from this low point of observation—that thus you will gratify your taste for the beautiful or awaken within emotional enjoyments. A child can perceive the beautiful in form and colour—can perceive the sweet influence of song and scene, and be a child still. We seek a higher object—a more honourable end is before us. It is knowledge—it is more—it is knowledge that can lead us to compare, to classify, to perceive great affinities, to draw general conclusions, to learn some of the great laws that rule in the physical world, and in some measure understand the grand and benevolent designs of the great Maker and Law-giver of creation. But whilst it is in the quietude of the study we can draw these general conclusions, it is by observing the facts and operations of nature, where alone these phenomena are going on, that we can draw safely those inductions which constitute the great principles of natural science. Away then to the field and the forest; to the hill, the valley, and the river side. There shall we realise most emphatically the truth and power of the inspired statement—"The works of the Lord are great, sought out of all them that have pleasure therein."

Will you allow me to make a few observations which may guard you against the erroneous impression that the members of a local Natural History Society should restrict their studies to the fauna or flora of their own neighbourhood. Doubtless one of the great designs of such societies is to accomplish this important result. Perhaps the complete natural history of a country will never be fully worked out, except through the active agencies of such associations. Let us, however, remember that this supposes that those who have combined together are accomplished naturalists, and have a comprehensive acquaintance with the various branches of natural history, so that they can detect rare or new species which have hitherto escaped obser-

vation. But such distinguished attainments cannot be possessed by those who have restricted their attention to the natural history of one district, or even of one country. There are many orders or families of animals and plants that are distinguished by important characteristics—surpassing beauty, gigantic size, or physiological peculiarities, which make these families both interesting and important in the estimation of men of science. Yet we may possess but one insignificant species that represents these great divisions. Allow me to illustrate what I mean by an example or two. The *Papilionidæ* family of Swallowtail butterflies contains some of the most magnificent and beautiful objects in the insect kingdom. The number known to belong to this family, when Jardine's *Naturalists' Library* was published, was about two hundred. Since then the number of the species discovered has been greatly increased. But we have only one species indigenous to Britain, and that solitary species is now only found in the fens of Cambridgeshire. Again, the *Pieridæ* to which the common White butterfly belongs, contains only six British species, or nine if we include the Brimstone and Clouded Yellows. Few of these are distinguished by form or plumage. These are but insignificant representatives of this group, as it is distributed throughout the whole world. Mr. Wallace, in the fourth volume of the *Entomological Society's Transactions*, catalogues two hundred and seventy-nine species which belong to the Indian and Australian regions.* In the same communication, he states that the number of species which are found distributed through the six great zoological regions of the earth amounts to seven hundred and sixty.

Our esteemed Secretary in his most beautiful report, asks—"Is it true that scientific pursuits lead to infidelity?" We should reply most emphatically—No. Yet there are many questions in connexion with some of the leading subjects of natural science, that have awakened strong feelings and criminations on the part of well-meaning but scientifically, ignorant people. These are ready to class all earnest enquirers after the knowledge of Jehovah's works with materialists and infidels. Probably for similar reasons the early chemists were called magicians; so in ages long since gone by, the men of that day scowled on the earnest student of natural science, who had, as by a heaven-born intuition, grasped some of the great truths through which God reveals himself to his creatures. But he was feared and condemned as one who dealt with occult mysteries. He was a dangerous character, more nearly allied to the infernal than the supernal. Yet the reflected light of God's perfections had fallen on his soul, with a glow and a glory that had not irradiated the grovelling minds of his fellow men. He was before his time. Society had not yet been raised to his mental standpoint; or rather the light of the coming day of knowledge had not shone

* "Out of 172 names (I speak only of *Pieris* as it was.) There are fifty which I would place as synonymses,"—W. C. Hewitson, F.L.S.—*Vide Ent. Soc. trans.*, 1863.

down to the low level where they were satisfied to pass their mental existence. Like the gilded mountain tops, he had received the glories of the rising sun, whilst those beneath him still lived in the darkness of the receding night time. Two centuries after the time of Galileo, it seems strange that any should think now that an attempt to interpret the laws of the physical world, or read the pages which God's hand has written through creation, should have a tendency to supersede the book of inspiration, or make an earnest mind think lightly of that best revelation of heaven. Can it be true that the study of the works of God must necessarily lead the mind to think lightly of the word of God? Can it be that the two great volumes of God's inditing can contradict themselves? Was there not a time when men had no revelation of inspiration? Yet the Apostle tells us that "that which may be known of God is manifest to them, for God hath showed it unto them; for the invisible things of Him from the creation of the world are clearly seen, being understood by the things that are made—even His eternal power and Godhead." Again, may it not be asked, has not the theologian gone away from his own peculiar province, when he attempts to explain the well-known laws of nature by interpretations which he derives, or thinks he is justified in deriving from the Holy Scriptures? The especial design of the word of God is to teach us great facts and truths which can be learnt by no other means. The common phenomena of nature are described in the language of the common people, by modes of speech which all could understand. Still, without impropriety or untruthfulness, when referring to the common events that transpire around us, we use the common language of society. Does any think less of the worth of the awful claims of the inspired word because it declares that "The sun ariseth and the sun goeth down and hasteth to his place where he arose?" Eccles. i. v., or that "the ends of the earth wait for God's salvation." Are we infidels for asserting that the sun neither rises nor sets, but that our own world simply turns upon its axis? Are we to be condemned because we affirm that a globe like our earth can have no ends or extremities?—For if so it would be a flat plain, as taught by the Hindoo mythology. The scriptures simply speak in the language of the people, and the people understand the language of the scriptures. To question the universality of the deluge has been regarded as an astonishing act of presumption that indicated a trifling with the Word of God, if it were not equivalent to the rejection of its great facts. But if these advocates of the universality of the deluge had exercised half the earnest enquiry of those who appear to differ from them, they might have learnt that their interpretations of scripture had less of probability in them than they have so dogmatically assumed. Does the term earth in the Word of God always and absolutely mean every part of the solid globe? The design of the insulted Ruler of earth and heaven in this fearful catas-

trophe was to punish mankind for their sins. If mankind then existing on the earth occupied only one continent or part of the globe, and that part was overflowed with the swelling waters, so that man and animals associated with them were drowned, was not the word fulfilled, "I will destroy them with the earth?" But as God never performs a single act in vain, or works a single operation in nature or providence but with some great end in view, may we not, without having a heavy charge brought against us, enquire about the probability of these animals being destroyed which inhabited those parts of the world, with which the ungodly race of mankind had never come in contact. What a continued series of miracles must have been wrought, that animals which had never been associated with mankind might be brought from that distant portion of the globe, across a trackless and untraversed ocean! During some of our evening meetings our attention has been directed to the marsupial or pouch-animals. It is a fact that with few exceptions the whole of this order of animals is found only in the southern portions of the globe, which are separated from the great continents of the northern hemisphere by a wide expanse of ocean. Geologists have elicited the fact that in ages long since past—ages indeed before the flood—the animals which inhabited these districts, though many of them were of gigantic proportions, belonged to the marsupial type of the mammalia, *i.e.*, the order of animals that now prevail in Australia. Without attempting to give an opinion upon this interesting question—Was the flood universal?—we might ask—Were the representatives of these pouch-animals brought over from yonder ends of the earth to be preserved alive in the ark, and then, by what appears to us a most miraculous interposition, sent back to the Australian continent again, there, and only there, to originate a new line of marsupial animals? Let it be remembered that this discussion does not involve a questioning of the truth of the inspired narrative, but of the correctness of the interpretation put upon it by those who claim for themselves a very high authority, who are indeed both judge and appellant in the great court of scientific enquiry.

There are some who think that as we grow older we should lay aside these studies of nature as suitable only to the days of boyhood and youth. Bulwer Lytton does not think so, and he is not young. Nor did the friend of his boyhood, he whom he loved so well. Those were striking words that astonished the youth in reply to the enquiry why he loved nature so much in his old age—"I shall soon leave the world: men and women I may hope again to see elsewhere, but shall I see elsewhere cornfields and grass, gossamers and ants? As we lose hold of our five senses do we wake up a sixth which had before been dormant,—the sense of nature; or have we certain instincts akin to nature which are suppressed and overlaid by reason, and revive only at the age when our reason

begins to fail us." Many years have passed since those words were spoken, and Bulwer Lytton writes :—" Year by year I find the same charm gains sway over myself. There was one period of my life when I considered every hour spent out of capitals as time wasted ; but now I love the country, as I did when a little child. Is it, partly, that those trees never remind us that we are growing old ? Older than we are, their hollow stems are covered with rejoicing leaves. The birds build amidst the bowering branches, rather than in the brighter shade of the sapling. Nature has no voice that wounds the self-love ; her coldest wind nips no credulous affection. She alone has the same face as in our youth. Those wild flowers under the hedgerow—those sparkles in the happy waters—no friendship has gone from them !—their beauty has no simulated freshness—their smile has no fraudulent deceit."

At the conclusion, tea and coffee, kindly provided by some of the lady-members, were handed round ; we may note here the decided improvement which this plan manifested over that adopted last year, when the tea took place at the commencement of the meeting. At 9 p.m. Mr. Sharpe read a valuable paper, which was listened to with great attention, "On the Geographical Distribution of the *Alcedinidæ* or Kingfishers," of which we regret that we can only give the following brief abstract. He proposed to divide the family *Alcedinidæ* into three sub-families, 1. *Alcedininæ*, containing those species whose food consists chiefly of fish and who seldom or never eat insects or other food ; 2. *Halcyoninæ*, containing those species whose food is mixed, and who subsist equally on insects, crustacea, &c. as well as on fish, 3. *Daceloninæ*, containing those species who feed almost entirely on lizards ; crustacea, &c. and who seldom or never touch fish. The Kingfishers of the sub-family *Alcedininæ* possess a long, thin, narrow, bill, and in general a very short tail, characteristics admirably adapted to their piscivorous propensities. They were found distributed over the whole of the Næarctic, Neotropical, and Palæarctic regions, being more sparingly represented in the Æthiopian, Indian, and Australian regions. In these two latter regions the *Halcyoninæ* were predominant, being sparingly represented in the Palæarctic and Australian. The bill which in the *Alcedininæ* is thin and compressed was shown to be in the *Halcyoninæ* considerably depressed, while in the sub-family *Daceloninæ* or lizard-eating Kingfishers it was still more depressed, until in the genus *Melidora* it reached its extreme development, being in this genus strongly grooved and hooked. The *Daceloninæ* were found to be peculiar to the Australian region. Mr. Sharpe exhibited specimens and pictures of some of the more remarkable Kingfishers, and illustrated on the map the geographical distribution of each species. After this the President's microscope was brought into use, and the various objects were inspected. The meeting separated at 11 p.m., about 140 persons having been present,

Flora of Buckinghamshire.

(Concluded.)

BY JAMES BRITTEN.

ROSACEÆ.—*Prunus communis a spinosa, b insititia S, c domestica S, Avium, Cerasus S. Spiræa ulmaria, Filipendula. Sanguisorba officinalis S. Poterium Sanguisorba, muricatum S. Agrimonia Eupatoria. Alchemilla vulgaris, arvensis. Potentilla anserina, argentea S, reptans, Tormentilla, fragariastrum. Comarum palustre S. Fragaria vesca, elatior S. Rubus Idæus, plicatus S, Lindleianus S, rhamnifolius S, discolor S, leucostachys S, macrophyllus S, b amplificatus S, Borreri S, Hystrix S, rudis S, Koehleri S, Guntheri S, corylifolius S, cæsius. Geum urbanum. Rosa villosa S, inodora S, micrantha S, rubiginosa S, canina, arvensis. Cratægus Oxyacantha. Mespilus germanica S. Pyrus communis S, malus, Aucuparia S, Aria, torminalis S.*

LYTHRACEÆ.—*Lythrum Salicaria. Peplis Portula S.*

ONAGRACEÆ.—*Epilobium angustifolium, hirsutum, parviflorum, montanum, tetragonum, obscurum S, palustre. Enothera biennis S. Circæa lutetiana.*

HALORAGACEÆ.—*Myriophyllum verticillatum, spicatum S. Hippuris vulgaris.*

CUCURBITACEÆ.—*Bryonia dioica.*

PORTULACEÆ.—*Montia fontana S.*

CRASSULACEÆ.—*Sedum Fabaria, album S, dasyphyllum S, acre, sexangulare S, reflexum. Sempervivum tectorum.*

RIBESIACEÆ.—*Ribes Grossularia S, rubrum S.*

SAXIFRAGACEÆ.—*Saxifraga tridactylites, granulata. Chrysosplenium oppositifolium. Parnassia palustris.*

UMBELLIFERÆ.—*Hydrocotyle vulgaris S. Sanicula europæa. Petroselinum sativum, segetum. Helosciadium nodiflorum, b repens, inundatum S. Sison Amomum. Ægopodium Podagraria. Bunium flexuosum. Pimpinella magna, saxifraga. Sium latifolium S, angustifolium. Bupleurum rotundifolium N.*

Cenanthe fistulosa, *pimpinelloïdes* S, *crocata* S, *Phellandrium* S, *fluviatilis* S. *Æthusa Cynapium*. *Feniculum officinale* S. *Seseli Libanotis* S? *Silaua pratensis* S. *Angelica sylvestris*. *Pastinaca sativa*. *Heracleum Sphondylium*, *b angustifolium* S. *Tordylium maximum* S. *Daucus Carota*. *Torilis Anthriscus*, *infesta* S, *nodosa*. *Scandix Pecten-Veneris*. *Anthriscus sylvestris*, *vulgaris* S. *Chærophylllum temulum*. *Conium maculatum*.

HEDERACEÆ.—*Hedera Helix*.

CORNACEÆ.—*Cornus sanguinea*.

LORANTHACEÆ.—*Viscum album* S.

CAPRIFOLIACEÆ.—*Adoxa moschatellina*. *Sambucus Ebulus*, *nigra*. *Viburnum Lantana*, *Opulus*. *Lonicera Caprifolium* S, *Periclymenum*.

RUBIACEÆ.—*Sherardia arvensis*. *Asperula cynanchica* S, *odorata*. *Galium cruciatum*, *Aparine*, *Mollugo*, *verum*, *saxatile* S, *uliginosum*, *palustre*.

VALERIANACEÆ.—*Valeriana officinalis*, *sambucifolia* S, *dioica*. *Valerianella olitoria*, *dentata* S.

DIPSACACEÆ.—*Dipsacus sylvestris*, *pilosus* S. *Knautia arvensis*. *Scabiosa succisa*, *columbaria*.

COMPOSITEÆ.—*Eupatorium cannabinum*. *Petasites vulgaris*. *Tussilago Farfara*. *Erigeron acris* S. *Bellis perennis*. *Solidago Virgaurea* S. *Inula Helenium* S, *Conyza* S. *Pulicaria dysenterica*. *Bidens tripartita*, *cernua* S. *Achillea Ptarmica*, *millefolium*. *Anthemis arvensis* S, *Cotula*, *nobilis* S. *Matricaria Parthenium*, *inodora* S, *Chamomilla* S. *Chrysanthemum Leucanthemum*, *segetum*. *Artemisia vulgaris*. *Tanacetum vulgare* S. *Filago germanica*, *spathulata* S, *gallica* S, *minima*. *Gnaphalium uliginosum*, *sylvaticum*. *Senecio vulgaris*, *sylvaticus*, *crucifolius*, *Jacobæa*, *aquaticus*, *campestris* S. *Carlina vulgaris* S. *Aretium majus*, *minus* S. *Centaurea nigra*, *Cyanus*, *Scabiosa*. *Onopordum Acanthium* S. *Carduus nutans* S, *crispus*, *b acanthoides* S, *lanceolatus*, *arvensis*, *palustris*, *pratensis* S, *acaulis*. *Silybum marianum* S. *Lapsana communis*. *Cichorium Intybus*. *Hypochaeris radicata*. *Thrinia hirta*. *Apargia hispida*, *autumnalis* S. *Tragopogon minor*, *porrifolius*. *Pieris hieracioides* S. *Helminthia cilioides*. *Lactuca virosa* S, *muralis* S. *Leonto-*

don *Taraxacum*, *b* *laevigatum* S. *Sonchus oleraceus*, *asper*, *arvensis*. *Crepis foetida* S, *setosa* S, *virens*. *Hieracium Pilosella*, *murorum* S, *vulgatum* S, *boreale* S. *Xanthium Strumarium* S.

CAMPANULACEÆ.—*Jasione montana* S. *Campanula glomerata*, *Trachelium*, *rotundifolia*, *Rapunculus* S, *patula* S. *Specularia hybrida*.

ERICACEÆ.—*Andromeda polifolia* S. *Calluna vulgaris* S. *Erica Tetralix* S, *cinerea* S. *Vaccinium Myrtillus* S. *Pyrola minor* S. *Monotropa Hypopitys* S.

AQUIFOLIACEÆ.—*Ilex aquifolium*.

JASMINACEÆ.—*Ligustrum vulgare*. *Fraxinus excelsior*.

APOCYNACEÆ.—*Vinca minor*, *major* S.

GENTIANACEÆ.—*Chlora perfoliata*. *Erythraea Centaurium*. *Gentiana Amarella*, *b* *germanica* S, *campestris* S. *Villarsia nymphaeoides* S. *Menyanthes trifoliata* S.

CONVOLVULACEÆ.—*Convolvulus arvensis*, *sepium*. *Cuscuta europæa* S, *Epilinum* N, *Epithymum*, *Trifolii*.

BORAGINACEÆ.—*Cynoglossum officinale*. *Borago officinalis* S. *Anchusa officinalis* S. *Lycopsis arvensis*. *Symphytum officinale*, *b* *patens*. *Echium vulgare*. *Lithospermum officinale*, *arvense*. *Myosotis palustris*, *repens*, *cæspitosa* S, *arvensis*, *b* *umbrosa* S, *collina*, *versicolor* S.

SOLANACEÆ.—*Solanum nigrum*, *Dulcamara*. *Atropa Belladonna* S. *Hyoscyamus niger*. *Datura Stramonium* S.

OROBANCHACEÆ.—*Orobanchè Rapum*, *minor* S. *Lathraea squamaria* S.

SCROPHULARIACEÆ.—*Verbascum Thapsus*, *Lychnitis* S, *nigrum* S, *Blattaria* S, *virgatum* S. *Digitalis purpurea*. *Antirrhinum majus* S, *Orontium* S. *Linaria Cymbalaria*, *Elatine*, *spuria*, *minor*, *repens* S, *vulgaris*. *Scrophularia nodosa*, *aquatica*, *vernalis* S. *Melampyrum cristatum* S, *pratense*. *Pedicularis palustris*, *sylvatica*. *Rhinanthus Crista-galli*. *Euphrasia officinalis*, *Odontites*. *Veronica scutellata* S, *Anagallis*, *Beccabunga*, *Chamaedrys*, *montana* S, *officinalis*, *serpyllifolia*, *arvensis*, *agrestis*, *polita*, *Buxbaumii* S, *hederifolia*.

LABIATÆ.—*Mentha rotundifolia* S, *sylvestris* S, *viridis* S, *aquatica*, *pratensis* *b* *rubra* S, *sativa* S, *arvensis*, *Pulegium* S.

Lycopus europæus. *Salvia Verbenaca*. *Origanum vulgare*.
Thymus Serpyllum, *Chamædryas* S. *Calamintha Nepeta* S,
officinalis S, *Acinos* S, *Clinopodium*. *Scutellaria galericulata*,
minor S. *Prunella vulgaris*. *Nepeta Cataria* S, *Glechoma*.
Lamium amplexicaule S, *incisum* S, *purpureum*, *album*, *Galeob-*
dolon. *Galeopsis Ladanum*, *Tetrahit*, *versicolor* S. *Stachys*
Betonica, *sylvatica*, *palustris*, *arvensis* S. *Ballota foetida*. *Mar-*
rubium vulgare. *Teucrium Scorodonia* S. *Ajuga reptans*.

VERBENACEÆ.—*Verbena officinalis*.

LENTIBULARIACEÆ.—*Pinguicula vulgaris* S. *Utricularia vul-*
garis S, *intermedia* S?

PRIMULACEÆ.—*Primula vulgaris*, *♂ variabilis*, *veris*. *Hottonia*
palustris S. *Lysimachia vulgaris*, *Nummularia*, *nemorum*.
Anagallis arvensis, *♂ cœrulea*, *tenella*. *Centunculus minimus* S.

PLANTAGINACEÆ.—*Plantago Coronopus* S, *lanceolata*, *media*,
major. *Littorella lacustris* S.

CHENOPODIACEÆ.—*Chenopodium olidum* S, *polyspermum*, *album*,
♂ viride, *ficifolium*, *murale*, *rubrum*, *Bonus-Henricus*. *Atriplex*
angustifolia, *erecta*, *deltoidea*, *hastata*.

POLYGONACEÆ. — *Rumex maritimus* S, *conglomeratus*, *obtusifolius* S, *crispus*, *Hydrolapathum* S, *Acetosa*, *Acetosella*. *Polygonum Bistorta* S, *amphibium*, *lapathifolium*, *Persicaria*, *Hydropiper*, *aviculare*, *Convolvulus*. *Fagopyrum esculentum* S.

THYMELACEÆ.—*Daphne Mezereum* S, *Laureola*.

SANTALACEÆ.—*Thesium humifusum* S.

ARISTOLOCHIACEÆ.—*Asarum europæum* S.

EUPHORBIACEÆ.—*Buxus sempervirens* S. *Euphorbia Helioscopia*, *amygdaloides*, *Peplus* S, *exigua*, *Lathyrus* S. *Mercurialis perennis*.

CERATOPHYLLACEÆ.—*Ceratophyllum demersum* S.

CALLITRICHACEÆ.—*Callitriche verna*, *platycarpa* S.

URTICACEÆ.—*Parietaria diffusa* S. *Urtica urens*, *dioica*. *Humulus Lupulus*.

ULMACEÆ.—*Ulmus suberosa*, *montana*.

AMENTIFERÆ.—*Salix alba*, *c vitellina* S, *rubra* S, *viminalis* S, *aurita* S, *caprea* S, *repens*, S, *♂ fusca* S. *Populus alba*, *tremula* S, *nigra* S. *Myrica Gale* S. *Betula alba*, *glutinosa* S. *Alnus*

glutinosa. *Fagus sylvatica*. *Castanea vulgaris* S. *Quercus Robur*. *Corylus Avellana*. *Carpinus Betulus* S. *Taxus baccata* S. *Juniperus communis* S.

TRILLIACEÆ.—*Paris quadrifolia*.

DIOSCOREACEÆ.—*Tamus communis*.

HYDROCHARIDACEÆ.—*Hydrocharis Morsus-ranæ* S. *Anacharis Alsinastrum*.

ORCHIDACEÆ.—*Orchis Morio*, *mascula*, *militaris*, S, *maculata*, *latifolia* S, *incarnata* S, *pyramidalis*. *Gymnadenia conopsea* S. *Aceras anthropophora* S. *Habenaria bifolia* S, *chlorantha*, *viridis* S. *Ophrys apifera*, *muscifera* S. *Herminium Monorchis* S. *Spiranthes autumnalis* S. *Listera ovata*. *Neottia Nidus-avis*. *Epipactis latifolia*, *media* S, *b purpurata* S, *palustris* S. *Cephalanthera grandiflora* S.

IRIDACEÆ.—*Iris Pseud-acorus*, *foetidissima* S.

AMARYLLIDACEÆ. — *Narcissus biflorus* S, *Pseudo-narcissus*. *Leucojum æstivum* S. *Galanthus nivalis* S.

ASPARAGACEÆ. — *Convallaria majalis*. *Polygonatum multiflorum* S. *Ruscus aculeatus* S.

LILIACEÆ.—*Tulipa sylvestris* S. *Fritillaria Meleagris* S. *Ornithogalum umbellatum* S, *nutans* N. *Allium vineale* S, *ursinum* S. *Endymion nutans*.

COLCHICACEÆ.—*Colchicum autumnale* N.

JUNCACEÆ.—*Narthecium ossifragum* S. *Juncus effusus*, *conglomeratus* S, *acutiflorus* S, *bufonius* S, *lamprocarpus* S, *squarrosus* S. *Luzula sylvatica*, *Forsteri* S, *pilosa*, *campestris*.

ALISMACEÆ.—*Alisma Plantago*, *b lanceolata*, *ranunculoïdes* S. *Actinocarpus Damasonium* S. *Sagittaria sagittifolia*. *Butomus umbellatus*. *Triglochin palustre* S.

TYPHACEÆ. — *Typha latifolia* S. *Sparganium ramosum*, *simplex*.

ARACEÆ.—*Acorus Calamus* S. *Arum maculatum*.

LEMNACEÆ.—*Lemna trisulca*, *minor*, *polyrrhiza*, *gibba* S.

POTAMOGETONACEÆ.—*Potamogeton natans*. *lucens* S, *perfoliatus* S, *crispus*, *pusillus* S, *densus* S.

CYPERACEÆ. — *Rhynchospora alba* S. *Eleocharis palustris*, *acicularis* S. *Scirpus lacustris*. *pauciflorus* S, *fluitans* S. *Erio-*

phorum angustifolium S. Carex pulicaris S, vulpina, muricata, divulsa S, remota S, stellulata S, ovalis S, acuta S, vulgaris S, pallescens N, præcox S, glauca S, fulva S, distans S, sylvatica, Pseudo-cyperus S, hirta S, ampullacea S, paludosa S, riparia S.

GRAMINEÆ. — Phalaris *canariensis* S, arundinacea S. Anthoxanthum odoratum. Phelum pratense. Alopecurus pratensis, geniculatus S, agrestis. Nardus stricta S. Milium effusum S. Phragmites communis. Apera Spica-venti S. Agrostis vulgaris S, alba S. Holcus lanatus, mollis S. Aira cæspitosa S, flexuosa S. Trisetum flavescens. Avena fatua S, pubescens S. Arrhenatherum avenaceum S, *b* bulbosum S. Triodia decumbens S. Koeleria cristata S. Melica uniflora S. Molinia cærulea S. Poa annua, nemoralis S. trivialis, pratensis. Glyceria aquatica, fluitans. Sclerochloa rigida S. Briza media. Cynosurus cristatus. Dactylis glomerata. Festuca sciuroïdes S, Myurus S, ovina S, arundinacea *b* elatior S, pratensis S, *b* loliacea S. Bromus erectus S, asper S, sterilis. Serrafaleus mollis S. Brachypodium sylvaticum S. Triticum caninum S, repens. Hordeum sylvaticum S, pratense S, murinum. Lolium perenne, *italicum* S, temulentum S.

EQUISETACEÆ. — Equisetum arvense, maximum, sylvaticum, limosum S, palustre S.

FILICES. — Polypodium vulgare, Robertianum S. Lastrea Filix-mas, spinulosa S, dilatata. Polystichum aculeatum, *b* lobatum, angulare S. Athyrium Filix-fœmina. Asplenium *fontanum* S, Adiantum-nigrum, Trichomanes, Ruta-muraria. Scolopendrium vulgare. Ceterach officinarum S. Blechnum boreale S. Pteris aquilina. Osmunda regalis. Botrychium Lunaria N. Ophioglossum vulgatum.

LYCOPODIACEÆ. — Lycopodium clavatum S, Selago S, inundatum S.

JAMES BRITTEN.

Royal Herbarium, Kew, W.
September, 1869.

NOTE.—A few additions made to the above list while in course of publication, raises the number of species to 816. These are entered in their proper places, with the exception of *Melilotus arvensis*. The S may be removed from *Ranunculus auricomus* and *Cardamine hirsuta*.

On the Crested Kingfishers of Africa.

BY R. B. SHARPE.

(With a Coloured Plate.)

SO much interest has been kindly manifested in the lecture on Kingfishers which I had the pleasure of delivering before the Society at the last annual meeting, that I have been induced to write a few words in commemoration thereof; and as an essay on the whole family would be tedious and uninteresting, I have chosen for the subject of the present paper the pretty little Crested Kingfishers of Africa (*Corythornis*).

It will be remembered that I spoke of the subfamily *Alcedinidæ* or true fish-feeding Kingfishers as being cosmopolitan, that is to say, representatives of this sub-family are found in all the different zoological regions of the globe. But the Æthiopian region contains two genera entirely confined within its area, viz., *Corythornis* and *Ispidina*. As, however, the members of this latter genus, though closely allied to *Corythornis*, seem to feed more exclusively on insects, I propose to include them among the *Halcyoninæ*; supposing the connecting link between these two sub-families to be found in these two genera.

The genus *Corythornis* contains only three species, all distinguished by their beautiful long crests, which differ from those of all the other Kingfishers in the form of the feathers. All the *Alcedinidæ* possess a crest, more or less, but this is generally formed by the simple elongation of the feathers of the occiput, all and each crest-feather is attenuated towards the tip. But in *Corythornis* the crest is fan-like, commencing from the base of the bill, and getting broader as it graduates towards the tip. These crests the little Kingfishers are able to raise and depress at their pleasure, and they doubtless are assumed in full splendour during the breeding season.

The three species of *Corythornis* may be distinguished by the

colour of their crests, and should any of our readers meet with these pretty little birds, they can easily tell the species by the following diagnosis:—

A. Beak black *C. cristata*

B. Beak vermillion.

a. Crest blue *C. cæruleocephala*

b. Crest malachite green *C. cyanostigma*

I will not trouble my readers with many scientific details respecting these birds, but subjoin the following particulars of their habits taken from the description in my 'Monograph of the Alcedinidæ.* I should state that *C. cristata* is called in my work *C. vintsioides*, and *C. cyanostigma* is called there *C. cristata*. This mistake was owing to a wrong identification of one of the old species of Linnæus, always a difficult task in the absence of all types, and in consequence of the curt descriptions of the older authors.

I. CORYTHORNIS CRISTATA.

(Dusky-Crested Kingfisher.)

Alcedo vintsioides - - - - - Eyd. et Gerv., Rev. et Mag. de Zool. 1836, p. 30, pl. 74.

Corythornis vintsioides - - - - - Kaup, Fam. Alced. p 12 (1848).

Ipsida phillipensis cristata - - - - - Briss. Orn. IV, p. 463, pl. xxxvii (1760).

Vinchi or *Bintsi*, of the Natives of Madagascar (*Newton, Pollen*).

C. rostro nigerrimo: suprâ lætè ultramarina: cristâ fuscescence-cyaneâ.

Hab. in insula 'Madagascar' dictâ et in insulis adjacentibus.

Crown of the head crested, the feathers being dusky-green, with black shafts and a bar of black near the tip; sides of the head, back of the neck and entire upper-surface brilliant ultramarine; wing coverts-black, washed and spotted with ultramarine; quills blackish, the inner web bright rufous at the base, the secondaries externally washed with ultramarine; tail ultramarine above, black beneath; chin and a longitudinal patch of feathers along the sides of the neck pure white; cheeks and rest of the under-surface of the body bright rufous; bill black; feet

* A Monograph of the Alcedinidæ or Kingfishers, by R. B. Sharpe.

red. Total length 5.3 inches, of bill from front 1.2, from gape 1.5, wing 2.3, tail 1.0, tarsus 0.25, middle toe 0.45, hind toe 0.2.

Hab. Madagascar, and adjacent islands (*Newton, Pollen and Van Dam.*)

The first description of this little Kingfisher is to be found in Brisson's 'Ornithologie' (*l.c.*) where, however, the habitat is wrongly stated to be the Philippine Islands; but as in addition to the very careful diagnosis given, the bird is said to be called by the natives 'Vintsi,' which is well known to be the native appellation in Madagascar for the present species, there can be no doubt that the specimen described by Brisson really came from that island.

The rarity of *Corythornis cristata* in collections, and our comparatively small knowledge of the ornithology of Madagascar, render the account of its habitats very meagre, but in the valuable work recently published by Messrs. Pollen and Van Dam we find the following interesting passage concerning it:—

"This bird is very common in Madagascar and Mayotte. It is always to be seen on the borders of the rivers, brooks, lakes, cataracts, and in the forests of mangroves which extend along the sea-coast. It feeds on little fishes and certain aquatic insects, on which it precipitates itself with great rapidity. In other respects it lives in the same manner as our common Kingfisher, and has a very similar cry. At Mayotte it is often seen perched on the leaves of the sugar-cane, near the canals which traverse the fields, having its eyes continuously fixed on the water, and awaiting, with patience, the moment when a little fish or an insect presents itself underneath, to precipitate itself upon it swiftly by plunging into the water. Having seized its prey, it returns to devour it, to the branch that it has just quitted; it may be seen lifting its crest, raising and lowering its head, and remaining, often for an hour together, in an almost immovable position. This species is by no means shy, and allows itself to be easily approached. It lives almost always solitary, sometimes in pairs, and it is only on rare occasions that more than three individuals are seen together. We have found this bird at Mayotte, Nossi-

bè, Nossi-falie, Tani-kely, Nossi-Bourrah and Madagascar. In this latter island it bears the name of 'Bintsi.'

Messrs. Roch and Newton state (*l.c.*) that in Madagascar this species was "tolerably common along the coast, and observed up the country as far as Beforona," and the latter gentleman observed it on his second visit to the island, to be as "common as it was last year."

The description and measurements, are taken from a beautiful male bird in my collection, procured from the 'Maison Verreaux.'

III.—CORYTHORNIS CYANOSTIGMA.

(Malachite-Crested Kingfisher.)

<i>Alcedo cristata</i>	-	-	-	Linn. Syst. Nat. I, p. 178 (1766).
<i>Corythornis cristata</i> ,	-	-	-	Kanp. Fam. <i>Alced.</i> p. 13 (1848.)
<i>Alcedo cyanostigma</i>	-	-	-	Rupp. Neue Wirb. pl. 34 (1835).
<i>Corythornis cyanostigma</i>	-	-	-	Kaup. Fam. <i>Alced.</i> p. 13 (1848).
<i>Alcedo cyanostigmata</i> ,	-	-	-	Des Murs, Voy. en Abyss, Zool. p. 81 (c. 1848).

Petit Martin-pecheur de l'Isle de Luçon, Buff. Enl. 756.

C. rostro lætè corallino: cristâ longissimâ malachitaceâ.

Hab. in totâ regione Æthiopicâ.

Adult Male. (South Africa). Head with a malachite-green crest, each feather being greenish-blue with a black shaft, and crossed by two black bands, the tip of the feather being black preceded by a band of blue; the feathers at the sides of the crest elongated and broader; sides of the head and entire upper surface of the body, rich ultramarine; wing-coverts blackish washed with blue; quills brownish black, the secondaries edged with faint ultramarine; tail blue above, black beneath; chin and longitudinal patch of feathers along the sides of the neck, white; cheeks, earcoverts, and rest of the under-surface of the body, rich rufous; bill and feet coral-red.

Young Female. Head crested, dusky-greenish, with very broad black shafts and bands, the feathers on the nape with a slight silvery lustre; back and scapularies light brown with light cobalt bars; back ultramarine washed with cobalt; tail ultramarine above, brown beneath; quills light brown, the inner web light

rufous from the base, the outer web edged with light ultramarine; lores light rufous; cheeks rufous with little black markings; throat and a patch of feathers along the sides of the neck yellowish white; under surface of the body pale rufous, lighter down the centre of the body; bill and feet blackish, tinged slightly with red. Total length 5.0 inches, of bill and feet blackish, tinged slightly with red. Total length 5.0 inches, of bill from front 1.3, from gape 1.75, wing 2.4, tail 1.1, tarsus 0.25, middle toe 0.7, hind toe 0.3.

Very young. Similar to the last, but the plumage much darker brown, the bars of blue being narrower and those on the head darker; the bars of cobalt on the wing-coverts and scapularies very distinct, upper part of the breast marked with a darkish brown line. Total length 4.3 inches, of bill from front 0.8, from gape 1.05, wing 2.0, tail 1.55, tarsus 0.2, middle toe 0.4, hind toe 0.2.

Hab. Abyssinia (*Heuglin*), Tigre; Dongola, Agula (*Blanford*), Nubia (*Lichtenstein*), White Nile (*Petherick*), River Gambia (*mus. R. B. Sharpe*), Bissao (*Verreaux*), Casamanze (*Verreaux*), Fantee (*Bowditch*), Ashantee (*mus. J. Gould*), Bonny River (*Jardien*), Gaboon (*Verreaux*), St. Thomas (*mus. Lisb.*), Angola (*Monteiro*), Cape Colony (*Layard*), Natal (*Ayres*), Transvaal (*Ayres*), Caffraria (*Wahlberg, Bulger*), Zambesi (*Kirk*).

In a paper recently published in the 'Ibis,' I entered fully into the question of the various races of this species to be met with in the Æthiopian Region, and came to the conclusion that, beyond the larger size of the South African birds, there was nothing to justify their separation from the form occurring in Western Africa and Abyssinia. At the time I wrote that article I laboured under the disadvantage of not being able to examine more than one specimen from North Eastern Africa, an imperfect skin sent from the White Nile by Consul Petherick, for the opportunity of inspecting which I was indebted to my kind friend Mr. Gould. I decided, however, that there was no reason to separate the Abyssinian bird as a distinct species, and subsequent experience has proved the correctness of this view, for

Mr. W. T. Blanford, the geologist attached to the late Abyssinian Expedition, has had the courtesy to submit to me two specimens obtained by him during his sojourn in that country, and these evidently belong to the same small race as the bird from the White Nile. I subjoin the measurements of the two Abyssinian specimens, and those of the other birds from Western and South Eastern Africa employed by me in my paper in the 'Ibis.'

No.	Sex.	Locality.	Authority.	Long tot.	Rostr.	Al.
1	male	Agula	Blanford	4·6	1·15	2·25
2	male	Dongolo	Blanford	4·6	1·2	2·2
3		White Nile	Petherick	4·75		2·1
4		R. Gambia	mus R. B. S.	4·70	1·15	2·2
5		Benguela	Monteiro	4·80	1·15	2·2
6	male	West Africa	Verreaux	5·00	1·25	2·1
7		Natal	Ayres	5·20	1·20	2·3
8		Natal	Ayres	6·00	1·20	2·3
9		Cape Colony	mus. R. B. S.	5·30	1·30	2·3

It will be seen at a glance that the bird from Western Africa is intermediate in size between the one from Abyssinia and that from South Africa. Should, however, some future ornithologist be bent upon separating the Abyssinian bird as distinct, it must bear the name of *Corythornis cyanostigma*, as the type of this supposed species came from Abyssinia.

The present species is spread over the whole of the Æthiopian region, and is nowhere very rare. Dr. Finsch, however, thinks that the bird from the island of St. Thomas, stated to be of this species by Professor Barboza du Bocage, is more likely to be *C. exruleocephala* and I agree with the learned doctor in this supposition. Nevertheless, my friend Mr. Keulemans expresses his belief from personal observation, that the true *C. cristata* is occasionally found there; and he also informs me that, according to the natives, a bird with a very long crest is sometimes met with in Princes' Island, so that it may be an occasional visitor there also. That these little Kingfishers do sometimes take long flights, Mr. Keulemans is certain; for in some of his excursions

to the different islands, he has observed them out at sea, skimming along the water, at least five miles from the nearest point of land.

Mr. Layard observes: — "This beautiful little Kingfisher is abundant throughout the colony, wherever a stream or marsh exists which can supply it with the necessary food. It breeds in banks, and lays four or five glistening white eggs, so transparent that the yellow yolk shines plainly through the shell. I have not myself seen the nest, but have been assured by many who have, that it consists of nothing but the bones of the delicate little fish upon which the bird habitually feeds." In the immediate neighbourhood of Cape Town, however, it seems to be not very common, for my friend Mr. Layard exerted himself vigorously to procure me some specimens, but without success, till at last he got quite by chance two at once, both young birds, which killed themselves by flying against a building in Cape Town.

Mr. Ayres' notes on the present species in Natal are as follow:—

"Eye black; legs and bill brilliant red; frequents both the coast and interior streams, and feeds on freshwater shrimps and small fish, but principally the former; also on beetles and insects; darts from a bough on its prey. Builds in holes in the banks, merely forming a small round chamber at the end of the hole."

Mr. Ayres has lately sent some eggs to the Rev. H. B. Tristram, and I am indebted to Mr. Gurney for the following note which was received by him from Mr. Ayres. He observes:— "It bores a hole some two feet deep in the bank of a river or streamlet, forming a small round chamber at the end, in which four pretty white eggs are laid."

The following details have been kindly supplied by my friend Mr. J. J. Monteiro:— "This beautiful little species is not uncommon all over Angola, particularly on the smaller rivers and lakes. It is a lovely object, as it flies actively about from twig to twig low over the water, and it has a pretty way when standing still of raising and depressing its beautiful little fan-like crest."

Dr. Kirk in his paper "On the Birds of the Zambesi Region "

informs us that it is "universal on all the waters, sitting on the reeds or bushes which overhang them, and darting on its prey. A larger species of *Alcedo* was observed among the rapids of the Shire, but not anywhere else." I think this last species must have been *Alcedo semitorquata*, which is in Mr. Dawson Rowley's collection from the Zambesi. In Abyssinia, according to Von Heuglin, the present species is "common and resident in Abyssinia, up to 10,000 feet above the level of the sea, in the Bogos Country, and in the country adjoining the Gazelle river." Mr. Blanford has very kindly given me the accompanying note. "I found this Kingfisher only on the highlands of Abyssinia but never much above 700 feet above the sea. I did not meet with it on the Anseba, and suspect that it is confined to the temperate region. It keeps to the banks of streams, and has, so far as I had opportunities of judging, precisely the flight and habits of *Alcedo ispida*, sitting on a branch over the water and thence dashing down upon fish, and when disturbed skimming rapidly along the stream just above the surface of the water. I never saw it far from water. It was not very common."

Des Murs in the 'Voyage en Abyssinie' observes:— "The first example was found on the river Assem near Adoua on the 25th of July, 1839, and a second was killed on the river of Waye Gongona on the 7th of April, 1840. It has all the flight and habits of our common species, and frequents the borders of the rivers."

It will be seen from the accompanying observations of the Messieurs Verreaux, that their experience of the Abyssinian race being about the same size as the South African, is exactly contrary to my own; and if their observations in this respect be correct, there can be no hesitation in the mind of any ornithologist in uniting the *C. cristata* from all parts of Africa under one and the same specific designation. I suspect, however, that as it is the case with so many other African birds, two races differing only in size may be found to inhabit respectively the highlands and plains of the same country. The above-named ornithologists have given us the following note:—"This species exactly resembles that of South Africa, which appears to be widely diffused;

for we can find no difference whatever, except the variation of size, in the numerous examples which have passed through our hands during the thirty years we have busied ourselves with the study of Natural History and of Ornithology principally." "We must state, however, that specimens from certain localities on the West Coast appear to us to be of a smaller size, while those from the Eastern portion, on the young of which our colleague, M. Rüppell, has founded his *A. cyanostigma*, entirely resemble those from the Cape of Good Hope. We have gained proofs of this by the comparison that we have made during our journeys among public museums. For the rest, its manners are the same as the *Alcedo ispida* of Europe. In the adult birds, no difference exist between the sexes; both have the iris clear blue, with the beak and feet lively red."

The description and measurements are from specimens in my own collection.

II.—CORYTHORNIS CÆRULEOCEPHALA.

(Blue-crested Kingfisher.)

- Alcedo cæruleocephala* - Gm. Syst. Nat. I, p. 449 (1788).
Corythornis cæruleocephala - Kaup. Fam. *Alced.* p. 13 (1848).
Alcedo cyanocephala - Shaw, Gen. Zool. VIII, p. 100 (1812).
Alcedo cyanocephala - Hartl. and Finsch, Orn. Ostaf. p. 163 (1869).
Corythornis cyanocephala - Cab. and Heine, Mus. Hein. th. II. p. 145 (1860).
Corythornis nais - Kaup. Fam. *Alced.* p. 12 (1848).
Alcedo nais - Gray, Cat. Fiss. Brit. Mus. p. 64 (1848).
Petit Martin-pecheur de Senegal, Buff. Pl. Enl. 356.
C. rostro corallino : cristâ breviori, lætissimè cyaneâ.

Hab. in Africâ occidentali, in Abyssiniâ et in Africâ eur-australi.

Head brilliant blue, with a long crest, each feather of which is blue with a black shaft and crossed by two black bands near the tip; sides of the head and rest of the upper surface of the body ultramarine; wing-coverts black spotted with ultramarine; quills blackish, their inner webs pale rufous at the base, the secondaries edged with ultramarine; tail blackish with a tinge of ultramarine above; throat and a patch of feathers along the sides of the neck,

white; lores, cheeks, and the rest of the under-surface of the body rich rufous, paler in very old birds; bill and feet coral red; eyes dark brown. Total length 5 inches, of bill from front 1.3, from gape 1.6, wing 2.2, tail 0.2, tarsus 0.3, middle toe 0.45, hind toe 0.2.

Hab. North Africa (*mus. Brit.*) Fazoglo (*mus. Philad.*), Az-Johannis, Tigrè (*von Heuglin*) Senegal (*Buffon*), Gold Coast (*mus. Lugd.*), River Camma (*Du Chaillu*), Loanda (*mus. R. B. Sharpe*), St. Thomas (*Weiss, mus. Brem.*) Ilha do Principe (*Dohrn, Keulemans*) Mozambique (*mus, Hein.*)

Although the present species has been known ever since the time of Buffon, great uncertainty has prevailed up to the present date, as to its geographical distribution. Gmelin gives its habitat as Madagascar, and Lesson as Java, both of which localities are erroneous, and it is now known to be confined to the Æthiopian Region. I have never seen an authentic specimen from Abyssinia, although I suppose the two specimens presented by Lord Mountnorris to the British Museum from "North Africa," are really from some part of the Abyssinian sub-region. Brehm states that it is never found north of 15 deg. n. lat., which assertion, however, needs a slight modification as von Henglin procured two specimens in a swamp at Az-Johannis in Tigrè, which is somewhat north of the line indicated by Brehm. As regards the existence of *Corythornis cæruleocephala* in Mozambique, I am somewhat sceptical, as no authority is given for the specimen in Heine's Museum. I hardly think its occurrence there likely, and I am by no means positive as to its ever being met with in Abyssinia: in all probability the small race of *Corythornis cristata* having been mistaken for it. There ought, however, to be no difficulty in identifying the present bird, as the difference in the length and colouring of the crest is at once perceptible.

According to the late Mr. Cassin, the Philadelphia Museum contains every known species of *Corythornis* and *Ispidina*, including *Corythornis nais* and his *Ispidina nitida*. What the two birds thus designated by Mr. Cassin really are, I cannot imagine, as I have examined Kaup's types in the British Museum and find that

Corythornis nais is nothing more than the young of *C. caeruleocephala*, and *I. nitida* is the young of *I. natalensis*, as will be seen in the account of that species. I beg leave to draw the attention of the Philadelphia Academy to this interesting question.

Dr. Dohrn (*l.c.*) informs us that in Prince's Island the *Corythornis caeruleocephala* is common on the shore; in a few instances I saw single specimens flying about in the interior of the island. The colour of the young bird is little different from that of old specimens; the bill is black, and the white spots on the throat and on the sides of the neck are very small. This species is as lively as *Halcyon dryas* is indolent. The native name is "Pica-peixe."

I am indebted to Mr. Keulemans for the following note on the habits of this hitherto little-known Kingfisher, as observed by him during his residence in the Princes' Island. "*Corythornis caeruleocephala* is a common bird near the sea-shore, and in the large river near the town of St. Antonio. It is very different in its habits from *Halcyon dryas*, being altogether a much more lively bird. Its food consists of fishes and water-insects. It breeds between the months of August and January. The eggs are five in number, white, almost round, and very glossy. They are deposited in holes or in clefts of rock, but I do not know if they make any nest. When not disturbed this little Kingfisher becomes very tame, and is particularly fond of frequenting the places where the native women are engaged in washing clothes, I suspect that the water being thus disturbed causes the aquatic insects to come to the surface, when they are eagerly pounced upon by the bird, which may be seen plunging into the water every minute. The natives call it "Pica-peixe" which signifies fish catcher."

The description and measurements are taken from a very fine male bird in my collection from Loanda. The largest figure in the plate is a copy of a painting made by Mr. Keulemans in Princes' Island from a recently killed specimen, while the smaller figure represents a younger bird.

Proceedings of the Society.

FIFTH SUMMER SESSION—1869.

The Annual Meeting for the Election of Officers, with which it has become customary to inaugurate the Summer Session of the Society, was held on Tuesday, July 27th, at Castle Hill, at the kind invitation of J. Edwards, Esq. Tea and coffee were provided at five o'clock; after which the members enjoyed a stroll about the grounds, and it was not until about seven that the business of the meeting began, when, the company being assembled in front of the house, the Secretary read the following report:—

For the third time it becomes my duty to report to you the progress of our society, which has now concluded the fourth year of its existence. It seems to me a peculiarly edifying practice that we should, at the end of each year, pause to look back upon the past, to note what we have done, and at the same time to observe our shortcomings, and glean hints for improvement in the many points where improvement is desirable. During the Summer Session of last year our Society was in abeyance; indeed, with the exception of a very pleasant meeting in the place where we are now assembled, any work done was rather that of individuals than of the Society as a body. Our winter meetings were, as usual, well attended: the following is a list of the papers read on those occasions:—

On English Plant Names (two papers)	<i>The Secretary.</i>
Winter Work	<i>Mr. Ulyett.</i>
*Additions to the Wycombe Flora, 1868	<i>The Secretary.</i>
On Some Obscure Points in Vegetable Physiology (communicated)	<i>Robert Holland, Esq.</i>
Our Water-birds	<i>T. Marshall, Esq.</i>
*Fern Freaks (communicated)	<i>Robert Holland, Esq.</i>
On the South Staffordshire Coalfields (communicated)	<i>Rev. W. H. Painter</i>
*On the Prominent Moths of Buckinghamshire (communicated)	<i>Rev. H. Harpur-Crewe.</i>
On the Progress of Geology	<i>John Parker, jun., Esq.</i>
*Annual Address	<i>The President.</i>

On the Geographical Distribution of the Alcedinidæ or Kingfishers

R. B. Sharpe, Esq.

Besides these, our President has given us short addresses upon subjects connected with various branches of Natural History, which have been profitable and interesting.

Of our Annual Conversazione in the Town Hall, I can only say that it may fairly be considered to have been, in every way, a very marked success—a success due in no small measure to the exertions of those who devoted their time to the arrangement of objects—to those who lent the objects, and last, but by no means least, to those ladies who, by supplying tea and coffee, and by undertaking the various duties connected therewith, contributed so materially to the comfort and sociability of the meeting. Although the thanks of the Society were not publicly presented to these ladies it was not from any want of gratitude on behalf of the members.

Our Magazine still continues, and, apparently, still gives satisfaction to its subscribers and contributors. It is to be regretted that it does not pay its expenses, but we have a balance in hand from the annual subscriptions, which it seems to me, in the absence of a museum, cannot be applied to a better object than the continuation of this record of our proceedings. Whether, at the conclusion of our present volume, we shall still be justified in its continuance is a matter which the future must decide. The papers published have been of local as well as general interest.

Owing to considerable irregularity in the payment of subscriptions, I can only lay before you a rough statement of accounts, which will, I trust, be considered satisfactory.

And now I must ask you to bear with me, while at the risk of being thought egoistical, I say a little about myself. You, who know how deeply and thoroughly I am interested in this work of ours—who have borne with my enthusiasm for natural science, even when I have failed to carry you with me and *make* you love nature as I love her—you who have encouraged me by your presence at our meetings, by your kind assistance in many ways when called upon to render it—you, especially, who have aided me with your observations, and enhanced the success of our meetings in various methods—you will, I am sure, believe me when I tell you how sincerely I regret to announce to you my approaching departure from this place. A post in the Royal Herbarium, at Kew, has been offered me, which I could not, in justice to myself, decline to accept. My resignation of the post of Secretary is, therefore, on this occasion no mere form—it is a necessity which none can regret more than myself. It has been said that my resignation would be followed by the collapse

of the Society—an idea which, flattering as it might be to my personal vanity, seems to me almost too absurd to mention. Is your interest in natural history so slight that the withdrawal of one member from a society like ours could be followed by so disastrous a result? I will not believe it. The duties of a secretary are not so heavy that any superhuman exertions are needed to fulfil them; and surely among 70 members one may be found who will come forward to fill up the gap. Yet, lest this should not be the case, I may mention that, should it be your wish that I should retain my post until the conclusion of the present year, I have made arrangements by which I hope to be enabled to be present as usual at our winter meetings. This, however, is only provisional; I need hardly point out to you how much better it will be if the post be filled by one residing on the spot; the matter is for you to decide. I have felt that it is advisable that the office of treasurer, which for the last three years has been united with that of secretary, should return to its former distinctness; the duties of collecting subscriptions and keeping accounts are quite sufficient in themselves to occupy one whose time is already much engaged; and I would, therefore, urge upon you the propriety of your appointing a Treasurer; this will have the effect of rendering the Secretary's duties even lighter than they are at present. All that you require in a Secretary is one whose heart is in the work, and surely it would be no difficult task to find such an one among us.

I avail myself of this opportunity to thank you for the extreme kindness you have one and all manifested towards me during my residence among you. If any proof were needed, of the catholicity of natural history, that proof your friendliness has afforded me. Whatever differences of opinion on other matters may exist between us, I can say with truth that you have been always ready to comply with any suggestion which I may have had to make with reference to the well-being or advancement of the society, and once more I heartily and sincerely thank you.

Perhaps you will pardon me for once more urging upon you the necessity of more real work among us. Not that we do not number among our members a proportion, it may be a fair proportion, of those who really devote part of their time to actual study of natural objects—we have one or two botanists who examine in the herbarium as well as in the field, our British plants—and others who employ the talents given them in transferring to paper the fleeting tints and delicate forms of our wild flowers, and learn while so doing, many interesting facts connected with them. Ornithologists, too, are fairly represented, and Mr. Sharpe

(whom we are proud to number among our members) is now issuing a work which has already a reputation as widely distributed as the birds which it describes—I mean the Monograph of the *Alcedinidæ*; two distinguished entomologists, resident in our county, assist us by contributing and subscribing to our magazine; and geologists, too, are not wanting.

I have not referred to our President, because I really do not know how to classify him; perhaps the best way would be to rank him with each of the above, and add that he is an astronomer, a chemist, and a first-rate microscopist, and that he has a supply of objects illustrative of each science, which I verily believe to be inexhaustible. I know that some have not much time to devote to such pursuits, but, surely each could do a little to forward the work. One might keep a meteorological table; another could note year by year the time of foliation, flowering, and fruiting of the trees; another could with very little trouble, rear caterpillars of different moths or butterflies, noting their food, and the dates of their transformation; a miniature aquarium and its inhabitants would amuse and instruct a fourth; the natural history of a limited district might occupy those who take their constitutional in some particular direction; in fact there is plenty to do, and nothing in nature is too small to be worth notice. There is such a charm of variety in nature; her rules as we define them, are so full of exceptions, which are perhaps really governed by other rules at present unknown to us; there is so very much to be done, and there are so few to do it. Not only are there many distinct branches of natural science, but each of these so divided and subdivided, and is so capable of further and further subdivision, that the difficulty is, not to know how much to attempt, but how little. And we need not go far afield to make discoveries. It is true, as our President told us, that we ought not to confine our researches to the insects, the plants, the animals, the birds of our own neighbourhood, or even of our own country, but we must remember that it is by the careful working of small districts that the productions of a country are ascertained. Neither need we hunt for rare objects on which to make our observations; some of Mr. Darwin's most important discoveries were elicited by his study of such common plants as the primrose and cowslip, the flax of commerce, and the purple loosestrife. When we think how absolutely little we know of the life-history of plants; when we think how many objects are connected with plants at one stage or other of their existence, how many in the larval state, feed upon the leaves, and in the perfect form of bee, or butterfly, or moth, derive sustenance from the flowers, in many cases at the same time fertilising these flowers by the transmission of pollen

from one to another—a transmission which recent investigations show to be absolutely necessary for the formation of the seed ; when we reflect too, that each insect has its history, with its marvellous changes, each one of which, were we not used to them, would fill us with wonder ; we must see that there is work for us all to do, and work which cannot fail to be a pleasure to all who undertake it. I do not expect you all to become botanists, geologists, or zoologists, in the scientific acceptation of the term, but I do urge upon you the necessity of being naturalists—lovers of nature. The more you observe the phenomena of the changing seasons, the development of plant or animal, the infinite variety which is an immutable law of nature, the more you will appreciate the words of the poet,

“The old order changeth, yielding place to new,
And God fulfils Himself in many ways.”

The cash account showed a balance of over £4 in favour of the Society when all claims had been paid.

The President then rose, and informed the members that they were now without officers, on which

John Parker, Esq., said that the sooner they were delivered from that predicament the better, and he would, therefore, move the re-election of the Rev. T. H. Browne as President, knowing that no one better fitted to fill the post could possibly be found. This was seconded by Mr. Thurlow, and carried by acclamation.

John Parker, jun., Esq., then proposed the re-election of Mr. Britten as Secretary. He was sorry to hear of Mr. Britten's approaching departure, but glad that his connection with the society would not cease ; and he had little doubt that his additional opportunities for study and observation would render his services even more valuable than they had yet been.

This was seconded by J. Edwards, Esq., in a complimentary speech, and carried unanimously. The Secretary briefly responded, thanking the members for the compliment they had paid him, and remarking that he should look forward with pleasure to the winter meetings, when he should again meet those who had helped and encouraged him in his work. He proceeded to move the appointment of John Parker, jun., Esq., to the office of Treasurer, which was seconded by Dr. Bowstead and carried unanimously. The re-election of the Committee followed ; after which the President gave an account of the recent excursion of the Geologists' Association to Oxford, at which the Society was represented. Among the objects exhibited were Lizards of various kinds, by the Presi-

dent; specimens of the Cornish Moneywort (*Sibthorpia europæa*) and Ivy-leaved Bell-flower (*Wahlenbergia hederacea*), from Bodmin, Cornwall; of the Ivy Broomrape (*Orobanchæ Hederæ*), from Clifton, Bristol; of the Flowering Rush (*Butomus umbellatus*), from the Thames, and of other plants, which were brought by the Secretary; who also showed an abnormal form of *Orchis pyramidalis*, forwarded from the Botanic Gardens, Glasnevin, Dublin. The President brought a crab, which had just cast its shell, and created some amusement by feeding it. After a cordial vote of thanks to Mr. and Mrs. Edwards for their kind reception of the society, the meeting, which was very numerously attended, separated.

Notes, Correspondence, &c.

Under this head we shall be glad to receive short notes on any natural objects, the preference being given to such as have a local interest. Notes on the popular names of, or traditions concerning animals or plants, or on any subject connected with Natural History, will be welcome.

RARE BIRDS IN OXFORDSHIRE.—I have to report the recent capture of several uncommon birds in this neighbourhood; a pair of the Lesser Spotted Woodpecker, on May 1st; a fine female Crested Grebe, on the 18th; and a splendid specimen (adult male) of the Roller, on the 27th. The Black Tern has also visited us in considerable numbers. I also wish to record the capture in May, 1868, of a male Painted Bunting,—doubtless in this, as in other cases of its occurrence in Britain, an escaped cage-bird, though I cannot hear of any one keeping them in confinement in this neighbourhood.

EVERARD F. THURM,
Alderbury Rectory, Banbury.
Field, June 5th.

THE same paper contains a notice of the occurrence of a Stork in Windsor Great Park, at the latter end of May.

AURORA.—A very beautiful display of the Aurora Borealis was observed at Wycombe shortly after ten on the night of May 13th.

WITWOLL.—Mr. Marshall, in our first volume, p. 73, draws attention to this name, which, in the slightly altered form of "Wetile," is applied in Buckinghamshire to the Green Woodpecker. The following interesting note on the subject is taken from Mr. T. Q. Couch's "List of Obsolete Words, still in use among the folk of East Cornwall." "Woodwall. The Woodpecker

Some doubt exists as to the bird originally designated the Woodwall. With us it is undoubtedly the Green Woodpecker. In the glossaries commonly appended to Chaucer's works, it is said to mean the Golden Oriole. The Greenfinch has also been set down as the bird intended.

"The *Woodwale* sung, and would not cease
Sitting upon the spray
So loud he waken'd Robin Hood
In the greenwood where he lay."
Robin Hood. (Itilson.)

"In many places, Nightingales,
And Alpes, and Finches, and Woodewales."
Romaunt of the Rose.

The note of the Green Woodpecker is a hoarse laugh, rather than a song. The extreme rarity of the Golden Oriole is conclusive against its being the bird intended. The Greenfinch has been suggested, but its song is hardly loud enough to have stirred the slumbers of the freebooter. Though the voice of the former can scarcely by any poetic license be called song, I decline to think it the bird meant. Yarrell (vol. ii. p. 137,) gives some interesting information on the etymology of the word. Brockett, in his Glossary of North Country Words, considers it derived from the Saxon '*whytel*,' a knife. In Yorkshire, and in North America, a *whittle* is a clasp knife, and to *whittle* is to cut or hack wood; the origin and the meaning of the Woodpecker's name are therefore sufficiently obvious; *whytel*, *whittle*, *whetele*, *wood-pecker*, &c."

THE REDSHANK.—"A specimen of that extraordinarily rare and beautiful bird, the Redshank, in its summer plumage, has been shot

lately, at Milton Keynes. The Redshank is a native of Timor Sunda, and New Guinea. It has been sent to Mr. Mantell, Newport Pagnell, to be preserved."—*Bucks Herald*, May 15, 1869.

COUCH-GRASS.—This most troublesome weed, one of the farmers' greatest enemies, known to botanists as *Triticum repens*, has a variety of English names. In Cumberland and Essex it is called Twitch; in Yorkshire, Wickens; in Cheshire and Shropshire, Scutch; in our own neighbourhood, Cooch or Couch-grass; in North Bucks, Squitch: all evidently having the same derivation, but an obscure one. In the Norfolk name, Quicks, and the Warwickshire, Quickengrass, we have a clue. No plant is more retentive of vitality than this *Triticum repens*; the smallest piece, left in the ground, will grow. All these names are but forms of the Anglo-Saxon word *cwic*, living; a word with which we are familiar as occurring in the English Prayer-book version of the Apostles' Creed, where "the quick" are referred to as opposed to "the dead." The words "quicks" and "quickset" are applied to living hawthorn hedges as distinguished from dead-wood fences; *cwic-beam*, the living-tree, was the Anglo-Saxon name for the Aspen (*Populus tremula*) in reference to its ever-moving leaves; and Quick-in-hand is an old name for the Touch-me-not Balsam (*Impatiens noli-me-tangere*) from the suddenness with which the seeds are discharged when the plant is handled.

THE FIRST EVENING MEETING of the present (Fifth) Winter Session will be held at the house of the PRESIDENT, the Rev. T. H. Browne, on Tuesday, Nov. 9, at 6.30 p.m.

Members desirous of reading papers at any of the Winter Meetings are requested to communicate with the Hon. Secretary, to whom all contributions for the Magazine should also be forwarded. Address:—JAMES BRITTEN, Royal Herbarium, Kew, London, W.

The Effect of Dry Weather upon Water Plants.

EVERY one must have remarked in a general way that the dry weather of 1868 was different in its effects on different plants. That some were burned up directly and never came to maturity; that some struggled through the fiery ordeal, and flourished at last when the rain did come; that some were but very little affected throughout; and a very few positively revelled in the tropical weather. Most people, at least most people who lived in the country, took note of these things and many interesting and valuable facts were recorded.

But by no means the least curious were the effects which the dry weather exercised upon aquatic and semi-aquatic plants. Of course we should be quite prepared to find *dry-land* plants much affected when every drop of moisture was abstracted from their roots, and they were obliged to grow in hot, loose dust, or in soil that had been dried and baked almost to the texture of stone. We should, probably, expect to find semi-aquatic plants even *more* injured when, instead of growing with their roots in the water, the water had receded from them, and left them high and dry upon the land; and yet, strange to say, with respect to the water plants, the reverse of this was what really took place in many cases; for it was observed that many plants which usually grow at the edge of the water, or upon very swampy ground, but which were growing in 1868 upon dry land were stronger, larger, and especially flowered more freely than usual; and that even some decidedly aquatic plants appeared to be much benefited by growing on soft mud instead of being quite immersed in the water.

These observations were almost forced upon my notice one day in July, 1868, when I and two fellow-botanists made an excursion to Oakmere in Delamere Forest. There are in Cheshire a great

many small sheets of water, locally called "meres." Oakmere is one of the largest of them, being about three-quarters of a mile long. It is surrounded by peat bogs and low heathery hills almost destitute of trees, except at one end where there are dark firwoods—altogether a wild, weird place, where you would not be the least surprised to see strange antediluvian animals roaming about. Oakmere, however, is celebrated as being the only English habitat of the very rare lesser small-reed, *Calamagrostis stricta*, and it was chiefly to collect this pretty grass that we went. A year before I had found it growing sparingly at the edge of the water, but on that day we saw it in great profusion and luxuriance, growing where it was quite dry enough to walk, but where in ordinary seasons there must have been a very wet swamp. The mere was at least a yard lower than usual, and the water, always shallow near the edge, had receded to a considerable distance, leaving a shore of soft oozy mud with here and there a pool of dirty, stagnant water. Here, however, on this mud, we saw the effect of the dry weather on aquatic plants; for it was almost covered with a luxuriant growth of Pond-weed (*Potamogeton natans*), throwing up beautiful, shining, almost erect leaves and a profusion of flowers. The Water-lilies too were equally fine; their glossy leaves standing upon short stalks and forming quite a jungle. I have noted this fact before as regards Water-lilies in very dry seasons.

Presently we came upon great patches of Sundew, both *Drosera Anglica* and *D. rotundifolia*, growing upon what ought to have been bog, but was now nearly dry and somewhat sandy land. The beautiful pink, jewelled leaves formed quite large rosettes and the flowers were borne on stalks six inches high. I think they were the finest Sundews I have ever seen. I suspect, however, that something besides the dry weather may have influenced their growth, for on our peat bogs, where they are very common plants,—none the less charming for that however,—they grow in various situations,—down in the wet ditches and up amongst the Heather and Andromeda, but I have always found them much the finest in the wetter places, sometimes even perched amongst

the tops of the *Sphagnum*, the Water-moss that so treacherously hides the deep and dangerous holes from which turf has been cut, and which are filled with water.

Not far from Oakmere we crossed a bog where there were many of these small square turf holes, and therein we found one of our greatest botanical treasures, *Utricularia minor* in profuse bloom, and we also observed the very remarkable way in which the dry weather had affected this plant. *Utricularia minor* is often found floating in bog water; but, so far as I have seen it, it is a tender, very straggling plant, never growing in great dense masses as *Utricularia vulgaris* does, and very seldom flowering,—so seldom that although I have seen it, perhaps hundreds of times,—I had never before seen it in flower. But here, when the water was nearly dried up it was spreading over the mud and creeping about the *Sphagnum* almost like Dodder in a clover field, and throwing up hundreds of spikes of its very pretty pale yellow flowers. I was quite content to sit down and look at it; but my companions, who were collecting for exchanges, fell to work *con amore*, only too glad of a rare opportunity to fill their boxes with so great a treasure.

But a still greater pleasure, if it were possible, awaited us. Wandering on, we came to a second small sheet of water, surrounded by a marsh of a very different character, and yielding a totally different class of plants. We picked up first the Bog Pimpernel (*Anagallis tenella*), not a remarkably rare plant, but very uncommon in Cheshire, and therefore, to us, a good find. Then the Marsh S. John's Wort (*Hypericum elodes*), a better find still. Soon the Small Skullcap (*Scutellaria minor*), the rarest of all. But presently we came to a brilliant patch of green, fringing the margin of a little pool. It looked for all the world like grass—only grass as green as this, would have been a rare sight, indeed, in that season; but to our delight and surprise too, it turned out to be a great mass of Pillwort (*Pilularia globulifera*) loaded with its curious fructification. There it grew, yards of it, on perfectly dry land, where no doubt there was usually shallow water. My companions carried away great bundles of it,—

enough to supply the wants of hundreds of correspondents, but we made no impression; we left it as green and apparently as plentiful as we found it; indeed I do not exaggerate when I say that we might have collected a cartload.

Many other water plants were no doubt similarly influenced, by the unusual weather; but I did not make any systematic notes, and the few cases I have given are the ones that stand out most prominently in my recollection. I think the Water Hemlock (*Cicuta virosa*) might be added to the list, for it was wonderfully luxuriant, as to leaves, but produced few flowers. I think, too, that the Great Willowherb (*Epilobium hirsutum*), and the Purple Loosestrife (*Lythrum Salicaria*), were both of them finer and more full of flower than usual.

A succession of dry seasons would no doubt be very detrimental to water plants; they would probably die out entirely, as rushes gradually disappear when land has been thoroughly drained. It is therefore the more curious that *one* exceedingly dry season should, in so many cases, have exercised a decidedly beneficial influence, and I am quite unable to give any satisfactory answer to the question "Why is it?"

ROBERT HOLLAND.

The Ichthyosaurus.*

DURING an excursion to Wheatley, which the members of our Society took four or five years ago, some fossil vertebræ were obtained in that neighbourhood, which are probably those of the Ichthyosaurus, one of those huge animals which inhabited the seas of liassic times. By the kindness of the President, these vertebræ are on the table to night, and I hope a short account of the reptile to which they belonged will not prove uninteresting to the members present.

* Read before the Society at the Second Evening Meeting of the Fifth Winter Session, December 14th, 1869.

Unwieldly in appearance, disproportionate (according to our ideas) in its head, and altogether enormous in bulk, I yet hope to show you that there is nothing in the structure of this extinct saurian that does not harmonise with the rest of creation, but that it is one of the many missing links brought to light by the labours of the geologist which tend now year by year to make up the perfection of the many-stranded chain of animated existence. As its name implies, it partakes of the natures of animals occupying distinct classes, it resembles both fishes and lizards—it is, in fact, an *Ichthyosaurus*, a fish lizard. Regard being had to its size, it occupied in the liassic seas the same position that the whale now fills—the hugest animal known, and one which in many respects it resembles, though in the all-important matter of food our ancient friend was predatory and carnivorous. He possessed, combined in himself, organs and arrangements never since found in any one species, but now divided, spread among three or four families; and was thus enabled to act in the economy of nature the parts now performed by many and widely separated species. He had a head resembling a lizard, the fore part a porpoise, the jaws and teeth were those of a crocodile, the vertebræ those of a fish, the paddles those of a whale, the body and tail those of a quadruped. Never since, I say, has such a combination been found in one animal, the nearest resemblance to such an arrangement in the present day is found in the *Ornithorhynchus* of Australia, the land of contradictions it used to be thought, where, as I read, at any rate, when I went to school, the nights are days and the days nights, the swans are black, and the dogs can't bark, the leaves grow edgeways, and the cherries have the stones outside. So, of course, we should expect to find an out-of-the-way creature there if anywhere. Possessing these varied organs you can imagine for yourselves the advantages which the *Ichthyosaurus*, thirty feet long, had over its contemporaries, and what havoc it was capable of making in the ancient seas. The number of these creatures were incalculable and no less than five or six different kinds have been disinterred from the lias rock. It was in the year 1811 that a country girl, who made a precarious living by

fossil hunting, discovered some bones projecting from a cliff: she got some workmen to clear away the surroundings and dig out the block in which they were buried, when the first known Ichthyosaurus lay before human eyes "a monster some thirty feet long, with jaws some feet in length." This was at Lyme Regis in Dorsetshire, a locality now famous as the "sepulchres of the ancient dragons," though they have been discovered in various parts of England, the lias formation forming a surface band reaching from Lyme Regis in a N.W. direction into Yorkshire. Of course, as you know, all representations are ideal ones as no specimen has been found perfect, yet they are no doubt very near the actual truth. You may be tempted then to ask how is it possible that we can represent thus a creature which disappeared from the earth many thousands of years since? I will try to show you. It is by the aid of comparative anatomy, a science which has made wonderful strides of late years, and without which many of our greatest discoveries could not have been made. There is such an intimate connection between the different organs of the body and the habits of the animal, that if you know one you can tell the other; and further than this, one particular organ or arrangement of organs, requires another particular organ or arrangement, and is never found without it, so that if you get hold of but even one or two bones you may mentally construct the skeleton and afterwards write a description of the appearance and habits of the creature, no further divergent from the truth than many a description of foreign animals now to be read in books. I may mention as a case in point that several years ago one or two bones were sent from New Zealand to this country by a naturalist who could not refer them to any known animal. Professor Owen, however, our greatest authority in such matters, could say positively that no such animal was known, yet he described what kind of creature it would be when found, and urged them to hunt both for bones and living specimens. The search was successful though difficult, and the curious creature known as the *Apteryx*, the bird without a vestige of wings and covered with feathers more like hair, is now to be seen alive in

the Zoological Gardens. Having said thus much I will briefly refer to the various organs of the Ichthyosaurus and show how it has been possible to give you its likeness.

The head resembles that of a lizard or crocodile, the fore part of it being like that of a porpoise. It was of an enormous size, in large specimens reaching a length of five or six feet. The teeth are conical, similar in shape to those of a crocodile, but not having sockets,—they were arranged in a ridge along the inside of the jaw. Ample provision was made for their continual renewal, a new tooth being constantly growing at the base of the old one; the number reached in some cases to 180. But the head differed from that of a crocodile in the position of the nostrils; the crocodile has them at the extremity of the head, the Ichthyosaurus had them just in front of the eye, as you may see in the little lizard so plentiful on our heaths. This shows a close connection with the lizard tribe, and the teeth prove it to be carnivorous. The most striking feature in the head is the *eye*, which equalled in size the human head and had an aperture 12 to 14 inches across. This enormous size would enable it to take in a proportionate quantity of light, a power which of course gave it a better opportunity of seeing its prey, especially in deep water where little light penetrated. The opening of the pupil was surrounded by a series of thin bony plates, by means of which the aperture could be contracted or expanded, and so the animal might adapt its sight to objects far off or near at hand. There is a similar arrangement in the eyes of turtles, lizards, and some of the birds of prey, but it is never found in fishes. Here we see, then, how the teeth and the eyes correspond, and we also begin to see that the animal was not a fish. As I have spoken of the teeth I may as well in this place finish what I have to say about the food of the ichthyosaurus. The teeth show it to have been carnivorous, but the question has been settled beyond all doubt, owing to the wonderful preservation of some of the specimens. One was found in the Lyme Regis quarries in which the contents of the stomach were fossilised inside the body; among them were bones and scales of fishes and reptiles,

and among the latter remains of its own species, so that it not only was a beast of prey, but it devoured its own kind.

We may next notice the vertebræ or separate parts of the back bone. They were more than 100 in number, thus giving great flexibility to the column. But these vertebræ correspond more closely to those of fishes in shape, and this tells us further that the Ichthyosaurus was fitted for very rapid motion in the water. The distinguishing feature of the vertebræ of fishes is that they are hollow on their faces, whereas those of other animals are more or less flat. Land quadrupeds *e.g.* require flat surfaces to these bones, because they press heavily against each other as they support the weight of the body. An arrangement of hollow vertebræ is weaker, and, therefore, the Ichthyosaurus with its huge body *could not* have moved about much on the land. This is another conclusion we draw from the character of the fossil; and we also begin to suspect that a hollow vertebral column tells of fins or paddles instead of legs. To these we will now come. Some of them are very perfectly preserved. Each consisted of a large number of bones—about 100 and at first sight seems an organ totally different from the hand or front member found in land animals. It is however constructed on the same plan; if you look closely you will find that the bones are arranged in five columns answering to the fingers and thumb, that next to these come the two bones of the fore arm, the *ulna* and *radius*, very short and stout, and then the arm bone or *humerus* also short and stout as was necessary to the size of the animal. This arrangement is identical with that in our own arms and hands, and is one more illustration of the great unity of plan which not only exists in creation now, but is thus shown to have existed in the dim vistas of the past. But there is a difference between the front and back pair of paddles, the former being much larger;—and why? Because the Ichthyosaurus being an air-breathing animal was obliged frequently to come to the surface to breathe, as the whale does now. The whale only possesses a front pair of fins, and seals which have two pairs have the anterior pair much larger, as our ancient friend had. The arrangement is the same as that

followed by man in building steam vessels, where the centre of the moving force is placed in front of the centre of gravity; and in the Ornithorhynchus, to which I before alluded, the membranous expansion of the fore feet greatly exceeds that of the hind feet. The arrangement therefore made it much easier for the animal to ascend from great depths to the surface in order to obtain a fresh supply of air, and this action was further facilitated by the form and arrangement of the breast bone and others to which the muscles were attached, and which are almost identical with those obtaining in the Ornithorhynchus. The only organ for me to notice, in conclusion, is the tail, which was very long, and flattened at the extremity, thus assisting the huge animal in propelling itself through the water.

HENRY ULLYETT.

Hollow Time.*

IT is scarcely necessary to remind you that the whole of the *terra firma* upon which we now stand, and which stretches away to the distant horizon, was once under water, forming the bed of a very deep sea. This fact is evident to the merest casual observer of our chalk pits; finding in them numerous remains of what are popularly called shell-fish, and of such only as exist in salt water, he naturally and correctly says that the salt water once covered these valleys and hills. And not only so, but he must also come to the conclusion that these hills themselves have been *formed* in the sea water, or else how do we account for the fact that the organic remains are found in all positions and at all depths from the surface? The chalk could not have been there before the shells; no, the shells were there, and the chalk

* Read before the Society on the third Field-day of the First Summer Session, Aug. 28, 1865.

formed over and around them, making a vast cemetery for the remains of the things that were.

Again, looking at the regular stratification in the section of any chalk pit, he sees that all was tranquilly done, that there was no violent effort of Nature in it: the appearance is similar to that presented on digging through the mud left by the Nile, or any other inundating river; all goes to show that a certain kind of sediment was continually being deposited in a tranquil sea. This must have gone on for untold ages, for it was a slow process, and the chalk formation is known in some places to be 1000 feet thick. The process being finished, the sediment was partially hardened by its own weight, and was afterwards raised above the surface of the water and still further hardened by the direct heat of the sun. This upheaval was also a gradual movement; if it had been done violently by earthquakes or other volcanic action we should find the layers bent in various directions; but we do not.

It was doubtless similar to what is now going on in the north of Scandinavia, where the land is known to be rising at the rate of (I believe) about four inches in a century. During the upheaval of the chalk the various valleys were scooped out. The mode of the formation of valleys often forms a stumblingblock to geological readers, who are apt to think it was always done by a *stream* of water. No doubt it was sometimes, but the principal agent to be looked at is *tidal action*, and the continual dashing of the waves of a mighty sea against the newly born shores. As the land rose up inch by inch, this ceaseless oceanic action wore it partially away, leaving the harder parts intact: the direction of the valleys shows in what direction the dynamical force was applied, and also to some extent the angle of upheaval in the land: more of course would be worn away in front of the waves than at the side, and as the rising went on the sea retreated.

From the character of the fossil remains found in the chalk the naturalist arrives at the conclusion that the climate of this part of the world was considerably warmer than it is now, for the species, not identical indeed with the fossil species, but of the same genera, are now known to live only in hot seas, *e.g.*, the

nautilus. I said that it was in a *deep* sea the chalk formed: this also the naturalist deduces from the fossils; the terebratula so common in it is never found in shallow water.

A few words about the *kind* of sediment of which our rocks are formed. The absence of colour is peculiar and would strike us at once. White mud seems almost an anomaly, yet it exists even at the present day: there is a certain tract of sea among the Bermudas, from the bottom of which it can be dredged up. When dry it is undistinguishable from common chalk; it is found to consist of carbonate of lime, and to have been formed by innumerable shells of foraminiferæ and other minute beings. We apply the same tests to our own chalk and we get the same results: hosts of delicately-sculptured shells, entire as well as broken, come to view beneath the microscope, and we are irresistibly drawn to the conclusion that nearly the whole of the chalk is formed of the shells of animals. The astonishment that attends this conclusion increases when we endeavour to *think* only of the number required to form this tract of land here before us; the mind refuses to enter into the calculation when we include all the chalk districts known in the world. In this chalk we find the remains of corals and sponges plentiful, along with sea urchins, fish occasionally and their scattered teeth, but no plants except seaweed, no river or land shells, no sand or pebbles—everything in fact tends to prove that the deposit was in a deep sea, far from land, the climate hot, and the living beings very different to what they are now in Europe.

It is hardly safe to venture a few words on the origin of flints, and the cause of their regular stratification. They are found most plentifully in the upper chalk, and their composition is siliceous, not calcareous. I may however say, that it has been discovered that certain microscopic infusoria may and *do* produce great quantities of flint: many species of sponges have their skeletons formed of it, and it would seem that the siliceous particles in the neighbouring waters congregated round a sponge as a centre, and then by some chemical process became the hardened flint stone we now see. It is very certain that the flint was once

in a soft, pasty state, for we frequently find fossil shells embedded in it.

Now, to come to the curious old lane we have chosen to ramble in to-day: From its sinuosity and from the wide bending in the further bank wherever a turn is made, it appears to be an ancient watercourse, down which, after these hills were upheaved, or while they were in course of upheaval, a mountain torrent rushed to join either a larger stream flowing through the present Hughenden Valley, or else the sea which was still slowly retiring. The deep cuttings made in the middle of the lane, where the outline of the hill is so much more convex, bear the signs of aqueous action; but the most decisive characteristics are the wide bendings or elbowings, which are exactly similar to those we may see now in our own stream, where it makes an abrupt change in its course. This was also the opinion of Mr. Lucas, who resided in Wycombe some years ago, and he was more competent to judge than I, since he had examined geologically many similar lanes in all parts of Great Britain. When I first ventured to make known this hypothesis I was vehemently opposed by the antiquaries of Wycombe, who will have it to have been an old road. So be it: I never denied the possibility, in fact I believe so too, but I claim for it in addition an existence before it was used as a road, even before the busy spirit of man had been called into being—before the earth was given to the gigantic mastodon and other elephantine monsters over which man has never had dominion. I can never believe that it was originally made a road, either by manual labour or by constant traffic, but it is exceedingly probable that the early inhabitants of this island *adapted* it to their convenience. There is many a rocky ravine in Devonshire filled with a roaring torrent during a wet season, yet traversed in summer and autumn by the more peaceful donkey with panniers or the cottager's cartload of garden produce.

HENRY ULLYETT.

Additions to the Wycombe Flora,—1869.

WE have not many additions to the Flora of our district to chronicle this year. The Common Gromwell (*Lithospermum officinale*), which has not before been observed nearer than Bisham Wood, was discovered by Miss Chandler growing in some plenty near Abbey Barn Farm. The Deptford Pink (*Dianthus Armeria*) has been found sparingly by Dr. Bowstead near Wheeler End Common, and as it seems to have disappeared from the Little Marlow road, where Mr. Mill found it in 1843, this may be looked on as the only locality where it exists at present in our district; the plant found on Green Street by Mrs. B. Lucas, which was recorded last year (ii., 62) as *D. Armeria* proves to have been only the Centaury (*Erythræa Centaurium*). The Scaly Spleenwort (*Ceterach officinarum*) has been observed in small quantity by Dr. Bowstead on a wall at Downley. The Hound's-tongue (*Cynoglossum officinale*) and Night-flowering Catchfly (*Silene noctiflora*) I found by the roadside between Lane End and Marlow. The Oxtongue (*Helminthia echinoides*) has occurred plentifully in fields on the Marlow Hill, by the footpath to Marlow.

JAMES BRITTEN.

Buckinghamshire Botany.

A VERY interesting branch of local botany is that which traces out, as far as possible, the history of a plant, as far as a certain district is concerned. At one time in local flora, this was much neglected, and the result was, that, while the modern botany of a county was well worked, the historical interest which might have been excited by a reference to the older writers, was omitted. Now, however, a better arrange-

ment obtains : and in Trimen and Dyer's 'Flora of Middlesex,' the best and most recent county Flora, the date of the first observation of each species recorded is given, with such notes in reference to its occurrence and record as appear of interest. It is my intention in the present paper to enumerate the plants which were recorded as occurring in Buckinghamshire prior to the commencement of the present century ; reserving for a second paper the references made to them in the earlier part of it.

Dr. William Turner, known as the father of English botany, published two books, the 'Herball,' and the 'Names of Herbes ;' the latter in 1548, the former in three parts, from 1551 to 1556. Although he records sixteen plants as occurring in Middlesex, he makes no reference to those in our county. It is to Gerarde's Herbal (1597) that we must turn for the first mention of Buckinghamshire plants : he gives the following :—

1. *Ophioglossum vulgatum* L ("Adder's toong"). — "In the meadowes by Cole-brooke."

2. *Gentiana Amarella* L.—"Upon a heath by Colbrooke neere London."

3. *Campanula glomerata* L.—"In the medowe next unto Ditton ferrie as you goe to Windsore."

4. *Inula Helenium* L. Elecampane.—"In an orcharde as yee go from Colbrook to Ditton ferrie, which is the way to Windsor."

5. *Xanthium Strumarium* L — "I founde [it] in the high waie leading from Draiton to Iver, two miles from Colbrooke."

6. *Archangelica officinalis* (Hoffm.) — "My friende Master Bredwell founde this plant growing by the mote which compasseth the house of Master Munke of the parish of Iver, two miles from Colbrooke."

7. *Berberis vulgaris* L. "(Barberie bush).—Especially about a gentlemans house called Master Monke, dwelling in a village called Iver two miles from Colebrooke, where most of the hedges are nothing else but Barberie bushes."

8. *Myrica Gale*. (Bog Myrtle).—"By Colbrooke."

Here we may note that Nos. 1, 2, 4, 5, 7, and 8 are cited by Trimen and Dyer (the 2nd and 7th, doubtfully) as Middlesex lo-

calities. Possibly those localised "by Colebrooke" may be ranked equally with the plants of either county: but Nos. 4, 5, and 7 are certainly to be referred to our county. We may observe that, among these eight species, are three which have no claims to be considered as indigenous in Bucks—*Inula Helenium*, which now, as then, affects "orchards;" *Archangelica officinalis*, which is, at best, but a naturalised plant, and regarding which Gerarde expresses some doubt; and *Xanthium Strumarium*, which nowhere establishes itself permanently, and seems to have been more frequently met with in former times than it is at present. *Myrica Gale* is not now to be met with in Middlesex or Bucks, although Dr. Trimen informs me that it is still abundant in Windsor Park.

John Parkinson, in his 'Theatrum Botanicum, or Theater of Plants,' published 1640, gives the following as Buckinghamshire plants:—

9. *Clematis Vitalba* L. (Old Man's Beard).—"In the hedges of fields, and by the highwayes side, in Buckinghamshire."

10. *Anagallis arvensis* (cærulea) (Blue Pimpernel.) — "At Beconsfield in Buckinghamshire."

"*Lactuca virosa* L.—"In the borders of fields and by the hedges and lanes sides of Buckinghamshire."

12. *Ceterach officinarum* L. (Scaly Splleenwort).—"On Beckensfield church in Barkeshire."

13. *Asplenium Ruta-muraria* L. (Wall Rue).—"At Beckonsfield in Buckinghamshire."

It is probable that all of these may be still found in Parkinson's localities. *Lactuca virosa* is rare with us, but abounds on the slopes at White Hill, on the way to Beaconsfield; I have never seen *Ceterach* on Beaconsfield church, but it is possible that it may still remain there in some corner out of sight: as in some of its present localities, e.g., a wall at Downley—there are but one or two very small plants, which might easily escape notice.

William How's 'Phytologia,' published in 1650, is interesting as being "the first attempt at a Flora of England, all previous works having been general systems of botany, including all known

plants." (Trimen and Dyer.) He gives the following, the latter of which is probably in Oxfordshire, although the tree is very abundant on the chalk in Bucks.

14. *Rubus Idæus* L (Raspberry).—"As common as brambles in the woods of Chesham—Boys in Buckinghamshire."

15. *Pyrus Aria* L.—"Growes plentifully in Henly Woods."

Nicholas Culpeper, whose Herbal, 'The English Physitian Enlarged,' 1653, has passed through so many editions, and is still so popular among village "herb doctors," records one addition to our flora, in the edition published 1653.

16. *Juniperus communis* L.—"Juniper-bush. In the High-way neer Amersham in Buckingham-shire."

In Robert Turner's 'Botanologia: the Brittish Physician, or the Nature and Vertues of English Plants' (1664), there are the following references to Buckinghamshire plants:—

17. *Polygonum Bistorta* L.—(Bistort or Snake-weed.) "I have found it in the meadows by Wickomb in Buckinghamshire."

18. *Sambucus Ebulus* L.—"(Dwarf Elder or Danewort.) In the lane near Hyedsor wharf in Buckinghamshire, and in the grounds of Mr. Hind at Hedsor."

Juniperus communis L.—"It grows much upon the hills and woody grounds in . . . Buckinghamshire."

19. *Linum catharticum* L.—(Mill-mountain.) "I have been told it grows near Wickomb in Buckinghamshire."

In Christopher Merret's 'Pinax' (1667) occur the following, which, possibly, may not belong to our county; the two first-named, however, are not cited by Dr. Trimmen for Middlesex.

20. *Caucalis daucoides* L.—"Plentifully in the corn fields near Slough, Middlesex."

21. *Festuca myurus* L. —"Beyond Slough on the ground."

22. *Echium vulgare* L.—(Viper's Bugloss) with flesh-coloured, blue, and white flowers.—"In many places 'twixt Aylesbury and Evesham."

Perhaps *Caucalis daucoides* may have been erroneously recorded, as Merrett's work is not always trustworthy; but its occurrence in our county is not improbable.

The illustrious Ray, whose method of classifying plants formed the basis of that system which is generally received at the present day, and whose knowledge of British plants was very comprehensive, makes a few additions to the Buckinghamshire flora. In his 'Catalogus Plantarum Angliæ,' (1670) he gives—

23. *Dianthus deltoides* L. (Maiden Pink).—"Mr. G. Horsnell gathered it on a little hill near Slough, about a mile-and-half from Windsor, called Mantham Hill."

In the first edition of the 'Synopsis' (1696)—

24. *Heracleum Sphondylium* L. var. *angustifolium*.—"Found by Dr. Plukenet near S. Giles's Chalfont in the mountainous meadows, Buckinghamshire."

In the second edition of the same work (1696)—

25. *Symphytum officinale* L. (Comfrey) (the form *S. patens* Sibth.)—"Dr. Plukenet observed it plentifully near Eaton."

26. *Salix rubra* Huds.—"In the Osier-holt, between Maidenhead and Windsor."

In the third edition (edited by Dillenius), 1734, is given—

27. *Hordeum sylvaticum* Huds. (Wood Barley).—"In the high woods by Hambleton, in the road from Henley to Great Marlborow [Marlow]. Mr. J. Sherard in company with Mr. Rand."

Besides these, the following are localised by Ray in the Stokenchurch Woods, a small portion of which is within our borders: *Rubus Idæus*, *Triticum caninum*, *Cephalanthera grandiflora*, *Tilia rubra*, and *Pyrola rotundifolia*, *P. minor* being probably mistaken for this last.

John Blackstone, who devoted considerable attention to British Botany, introduces a larger number of Buckinghamshire plants to our notice than any author before or since. They are chiefly from the neighbourhood of Harefield, Middlesex, as far as those which he records from his own observation are concerned; others in the county were brought under his notice by friends and correspondents. In his first little book, 'Fasciculus Plantarum circa Harefield nascentium' (1737), he gives the following:—

Polygonum Bistorta L.—“In the Meadows near Uxbridge.”

28. *Calamintha Nepeta* Clairv.—“By the Roadside leading from Harefield to Chalfont St. Peter's, plentifully.” In the ‘Specimen Botanicum’ the locality is further defined as being “between St. Peter's and St. Giles's Chalfont, Bucks, abundantly.”

29. *Cardamine amara* L.—“About Uxbridge plentifully.”

30. *Chlora perfoliata* L. (Yellow-wort).—“In the Old Chalk Pit near the Duke of Portland's at Gerrard's Cross, plentifully.”

31. *Vinca minor* L. (Lesser Periwinkle).—“In a Lane leading from Uxbridge Moor to Iver Heath.”

32. *Calamintha Acinos* Clairv (Wild Basil).—“In the Old Chalk Pit near the Duke of Portland's at Gerard's Cross, plentifully.”

33. *Hydrocotyle vulgaris* L. (Marsh Pennywort).—“On Iver Heath abundantly.”

34. *Hieracium murorum* L.—“On the Old Walls of the Duke of Bedford's Garden at Cheynies, in Buckinghamshire.”

35. *Hypericum Elodes* L. (Marsh S. John's Wort).—“In the Bogs on Iver Heath near Uxbridge, plentifully.”

36. *Epilobium angustifolium* L. (French Willow).—“By the Side of a Wood about the Midway between Beaconsfield and Uxbridge.” In the ‘Specimen’ another locality is given: “In a wood by Sir John Packington's Lodge on Coomb-hill at Ellesborough, Bucks. Dr. Wilmer.”

37. *Nepeta Cataria* L. (Catmint).—“By the roadside between St. Giles's and St. Peter's Chalfont, plentifully.”

38. *Herminium Monorchis* R. Br. (Musk Orchis).—“In a Chalk-Pit near the Duke of Portland's, at Gerard's Cross, plentifully.”

39. *Ophrys apifera* L. (Bee Orchis).—“In the Chalk Pit at Gerard's Cross, plentifully.”

40. *Orobanche Rapum* Thuill. (Broom-rape).—“Amongst the Broom at the Entrance of Iver-Heath plentifully.”

41. *Poterium Sanguisorba* L. (Salad Burnet).—“In the Beech-Woods in the Road to Chalfont St. Peter's, plentifully.”

42. *Ranunculus Lingua* L. (Great Spearwort).—“In the Bogs on Iver Heath.”

43. *Jasione montana* L. (Sheep's Scabious).—"In a Lane leading from Denham to Iver Heath."

44. *Rhamnus catharticus* L. (Buckthorn).—"In the Hedges between Uxbridge and Beaconsfield plentifully."

45. *Drosera rotundifolia* L. (Roundleaved Sundew).—"On Iver Heath plentifully."

46. *Petroselinum segetum* L. (Corn Parsley).—"By the Road's Side near Eaton, sparingly."

Campanula glomerata L.—"In the Chalk Pit near the Duke of Portland's at Gerard's Cross."

47. *Dianthus Armeria* L. (Deptford Pink).—"I found it this year (1737) by the Road's side leading from Harefield to Chalfont St. Peter's, but very sparingly."

In addition to many of the foregoing, the following are given in the 'Specimen Botanicum,' 1746:—

48. *Lathyrus Aphaca* L. (Yellow Vetchling).—"Among the Corn near Denham, Bucks. Mr. Hill."

49. *Dianthus Caryophyllus* L. (Clove Pink).—"On a wall at Langley, near Iver, Bucks."

50. *Galium cruciatum* L. (Crosswort).—"In the Old Chalk-pit at Gerard's Cross, Bucks."

51. *Cephalanthera grandiflora* Bab. Large Helleborine).—"Plentifully in a Beech-wood just below the Duke of Bedford's Seat, at Cheyneis, Bucks." Given in the 'Specimen' under two names, *Helleborine flore albo*, and *Helleborine latifolia flore albo clauso*: but Blackstone justly observes, "I am convinced that they are the same plant."

52. *Helleborus viridis* L. (Bear's-foot).—"In the woods near Denham, Bucks. Mr. Hill."

53. *Paris quadrifolia* L. (Herb Paris).—"In a Chalk-pit in a Wood near Little Missenden Church, Bucks. Dr. Wilmer."

54. *Lactuca muralis* DC. (Wall Lettuce).—"On the Walls of the Duke of Bedford's Seat at Cheyneis, Bucks."

55. *Melampyrum cristatum* L.—"In a Field that goes off Moreton, Green in the Road from Wendover to Ellesborough, Bucks. Dr. Wilmer,"

56. *Mentha rubra* Sm.—“By the River-side a mile below Denham, Bucks. Mr. Hill.”

57. *Ophrys muscifera* Huds. (Fly Orchis).—“In a Beech-wood just below Cheynies Church, Bucks.”

58. *Orchis pyramidalis* L. (Pyramidal Orchis). — “In a Meadow against Mr. Drake’s Garden at Shardeleis near Agmondesham [Amersham], Bucks. Dr. Wilmer.”

59. *Alisma ranunculoides* L. (Small Water Plantain).—“In the Bogs on Iver-heath near Uxbridge. Mr. Hill.”

60. *Polygonatum multiflorum* All. (Solomon’s Seal). “In the Beech-woods about High-Wickham, Bucks. Mr. Hill.”

61. *Reseda lutea* L. — “In the Fields near High-Wickham, Bucks. Mr. Hill.”

62. *Scrophularia Ehrharti* Stev.—“Figwort with green Leaves and Flowers. I have observed this Plant in the shady Woods between Harefield and Chalfont St. Peter’s but not plentifully.”

63. *Thlaspi arvense* L. (Penny Cress). —In a cornfield on the west side of Chalfont St. Peter’s, Bucks, plentifully.”

64. *Vaccinium Myrtillus* (Whortleberry). —“On Iver-heath near Uxbridge, plentifully.”

It is to be feared that some, at least, of the plants recorded in these lists have disappeared under cultivation. Iver-heath exists only in name; and the “bogs” have probably disappeared. Of *Jasione montana*, for which the above locality is the only one known at present in the county, it is interesting to learn that it was observed once only, probably in Blackstone’s locality, a few years since; it may be expected to reappear. In No. 49 of this list we have a good illustration of the importance of referring to the work in which any locality is first published. The locality for the Clove Pink has, in the ‘Botanist’s Guide’ and subsequent works, been erroneously quoted as applying to *D. deltoïdes*.

The “Mr. Hill” whose name occurs above, published in 1760 a ‘Flora Britannica,’ in which we find the following:—

65. *Dipsacus pilosus* (Small Teasel).—“In Lanes near Denham in Buckinghamshire.”

66. *Verbascum Blattaria* L.—“Near Denham.”

Atropa Belladonna L. (Deadly Nightshade).—“In a Gravel-pit near the old Park-wood, at Harefield, in Buckinghamshire.” [This locality is in Middlesex.]

67. *Viola major* L. (Great Periwinkle).—“In the Highways between Wolverton and Yarnton, and in several Hedges thereabout, Dr. Plot.” [I am not sure whether this be in Bucks.]

68. *Actinocarpus Dámasonium* (Star-fruit).—“By the Road near Uxbridge, towards Denham.” [Dr. Trimen cites this for Middlesex.]

69. *Hypericum Androsomonum* L. (Tutsan).—“By the Smiths on the Hill, a mile from Denham, towards Rickmansworth, 1760.”

70. *Lycopodium annotinum* L. — “On Iver Heath, near Uxbridge, abundantly.”

In a later work, ‘Herbarium Britannicum’ (1769—70) by the same author, are the following:—

71. *Hypochaeris glabra* L.—“Denham.”

72. *Carduus acanthis* L. (Stemless Thistle).—“Bulstrode.”

Caucalis daucoïdes L.—“Aylesbury.”

73. *Smyrnium olusatrum* L. (Alexanders).—“Denham.”

74. *Asperula cynanchica* L. (Squinancy-wort).—“Wickham.”

75. *Atropa Belladonna* L. (Deadly Nightshade).—“Bulstrode.”

76. *Euphorbia platyphylla* L.—“Buckinghamshire.”

77. *Lepidium campestre* Br.—“Denham.”

Cardamine amara L.—“Buckinghamshire.”

Although nos. 70, 72, and 75, stand for our county solely on Hill’s authority and have not been recorded since, there is nothing improbable in their occurrence, with the exception of *Lycopodium annotinum*. They should be carefully searched for.

JAMES BRITTEN.

To be continued.

Proceedings of the Society.

FIFTH WINTER SESSION—1869-70.

THE FIRST EVENING MEETING was held on Tuesday, Nov. 16, at the house of the President, the Rev. T. H. BROWNE, by his kind invitation, and was largely attended. The SECRETARY read a paper on "Double Flowers," demonstrating the various modes in which these beautiful monstrosities are produced, and explaining their structure and the consequent metamorphoses of parts. This was illustrated by specimens and drawings. At its conclusion, the President gave an address on the three scientific topics of the day, viz.:—The discovery and measurement of sidereal motions by means of the Spectroscope; the Meteoric band and the appearance of it by means of the November star showers; and the observations that have lately been made on the formation of chalk by means of deep ocean deposits. These deposits throw great light on the mode by which the chalk hills around us were built up. A microscopic examination of the minute organisms that form the bottom of the ocean, not only discovers foraminifera which are kindred to those of the cretaceous period, but rings and disks that constitute the cementing element in chalk having living analogues in seas of recent times. Disks from the upper chalk near Wycombe were exhibited through the President's microscope. There was on the table a large collection of Ichthyic and Molluscous remains from the chalk, many of them collected from our own neighbourhood. By means of the spectroscope different kinds of absorption bands were shown, in different alcoholic solutions of chlorophyll, etc. There was, as usual, a large exhibition of objects, and the meeting did not separate until a late hour.

THE SECOND EVENING MEETING was held on Tuesday, Dec. 14, at the house of Mr. R. VERNON, by kind invitation. The first paper was one by Dr. BOWSTEAD, on "The Gamekeeper's Museum," in which were described those of our animals and birds which fall a prey to the ignorance of the gamekeeper, a sketch of the habits of each being given; and it was clearly shown that, in the majority of cases, his supposed foes are, in reality, his most useful friends. This paper was listened to with great interest, and

was warmly applauded ; at its conclusion, conversation on the subject took place, and the sympathy of the meeting with "our feathered friends" was strongly expressed. A paper by Mr. ULLYETT, on "The Ichthyosaurus" followed, which will be found at page 148 of the present number. A long and spirited discussion followed the reading of this paper, the President expressing his opinion that the vertebrae from Wheatley were those of the Plesiosauros. In the course of the discussion the President pointed out the difference between the Pleiosauros and Ichthyosauros ; that the one had no sockets in which the teeth were inserted, but that the former had a prolongation of tooth. This was illustrated by the cast of a large Pleiosaurian tooth in the British Museum: this gigantic tooth is a foot in length and the fang by which it was embedded in the jaw can be distinctly seen. The President exhibited some very beautiful and perfect remains of the *Bos primogenius*, from some ancient beds of river drift, lately discovered and sent to him from Bristol; there was an almost perfect skull and very fine horn cores; the horn cores of another specimen; and the pelvic bones. On the table there were a large humerus of Plesiosauros from the Kimmeridge clay, Weymouth; and a slab containing the paddle and ribs of *Ichthyosaurus communis* from the Lias, Lyme Regis. &c., &c.

Notes, Correspondence, &c.

LATE SWALLOWS, &c.—On Nov. 30, Mr. Tomlinson, under-gardener to Lord Carington at the Abbey Gardens, brought me a live swallow which he had caught in the packing house. The bird was very lively and well-fed. I let it go in my hay loft, where it flew about several times and finally settled on a rafter under the tiles. I have not seen it since, but thought it would interest the readers of our magazine to know how late a swallow had been seen in these parts. Owing to the severity of the weather, I have noticed this year (1869) immense flocks of field-fares and redwings

feeding upon the haws in the hedges; and never during the last 15 years have I seen such large flocks of those birds.—R. M. BOWSTEAD, M.D.

"On Saturday, Nov. 20, a very fine day for November, a house martin was seen flying about on the Thames, near the Brocas, Eton. It was skimming the water, and apparently as strong on the wing as in the bright days of summer.—R.S."—*Field*, Nov. 30. The same paper for Nov. 23 records the notice of a swallow at Windsor Castle on the 16th, and of a swift at Henley on the 11th, of that month.

9
green

WILD SWANS IN BUCKINGHAMSHIRE.—An unusual capture was made in the parish of Little Brickhill, Bucks, about ten a.m., on Wednesday, Dec. 22. There was a slight covering of snow, and the atmosphere was very misty. A labourer on the farm of Mr. Gregory perceived three wild swans flying towards him, not more than ten or fifteen yards from the ground. He threw a stone and broke the wing of one of them, which, of course, fell an easy victim. The field in which this took place is a grass field called "the Fishpond Close," but there is no pond or other water within a considerable distance. The labourer, delighted with his booty, presently set to work to pluck it, with an eye to his Christmas dinner. Had he been better advised, he might probably have obtained a good sum for the bird, as a specimen to be stuffed.—**J. W. WILLIAMSON** (Bletchley). *Field*, Jan. 1, 1870.

From a letter in the *Buckingham Herald* of Jan. 15, it appears that the remaining two went on to Fenny Stratford, where they were seen on the same day. "On Monday, the 27th, they came down again; and when flying near the railway bridge one was shot by a man employed on the railway. The other flew on towards Simpson, and was shot there. The swans probably came from Woburn Park, and were young birds, as their feathers indicated. It appears to be a common thing for the young birds to take flight the first winter from their homes, and in this case it resulted fatally to them." When will the happy time arrive when the noticing and the shooting of a rare bird shall be no longer synonymous terms?

CURIOUS CAPTURE OF A TENCH.—"I was fishing here, near the Quarry Wood, on the 13th Nov., with Rockel, fisherman, using a fine paternoster line, baited with two minnows, for perch. Feeling a bite, I struck, and after about five minutes' play secured a fine tench, weighing 3lb., with the

bottom hook fixed in its tail.—**C. A. C.** (Great Marlow)."—*Field* Nov. 23, 1870.

CATS TAKING THE WATER.—"That cats will take the water is on record; there was a cat, or rather a family of cats, if I remember aright, at the 'Complete Anglers,' Marlow, that used to swim after the dead fish thrown out of the punt wells by the fisherman. This could, no doubt, be corroborated.—**C.C.C.**," in *Science Gossip*, Sept., 1869. Can any of our readers substantiate this?

PLANT NEW TO THE COUNTY.—Mr. Henry Taylor, of Aylesbury, has forwarded us a specimen of *Senecio* (*Cineraria*) *campestris* L, which he discovered in June last on the chalk hill above Aston Clinton, called Aston Hill. It has not before been recorded for the county.

THE NAMES OF ANIMALS.—Reynard, Bruin, Tibert, Partlet and Chanticleer as equivalents for Fox, Bear, Cat, Hen, and Cock owe their origin to the proper names to the inventive genius of the middle ages: they were coined by the author of that beast-epic the *Reineke Fuchs*, which enjoyed such a wide popularity at that time that it was translated into most of the languages of the Europe. Whilst only synonyms with us, in several tongues they have supplanted the older forms. For instance, Renard in French is the general name for Fox, to the exclusion of the older name Volpils: Björn is the general name for a Bear in the Norse, as Pöro, a he-bear, and Pirinn, a she-bear, in the Old German. Tibert still survives in Tabby-cat, and is the Tybalt of "Romeo and Juliet" ii. 4, and iii. 1; the Tybart of Decker's "Satiromastix;" the Tibalt of Nash's "Have with you to Saffron Walden;" and in the Romaunt de Renart V. "Then the King called for Sir Tibert the cat." If some of your subscribers could enlighten me as to puss, the poetical soubriquet for a hare, I should feel much obliged.—**SAMUEL DYER**,

